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**Breathing Easy in New England**

*Improving the Health of Asthma Sufferers  
Through the Application and Modification  
of Building and Sanitary Codes*

A Law, Culture and Difference Social Justice Project  
With the New England Asthma Regional Council

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## **I. INTRODUCTION**

Asthma is a chronic condition affecting the respiratory system. During an asthma attack, airways in the lungs narrow, making normal breathing increasingly difficult. Symptoms may range from coughing to varying levels of wheezing, and may ultimately cause life-threatening inability to breathe. There is no known single cause of asthma, but it is known that asthma symptoms can be significantly reduced by minimizing or eliminating exposure to environmental triggers.

Factors that trigger asthma unknowingly surround many Americans. Some of the most potent triggers can be found in the home. Poor ventilation, ineffective moisture control, and the existence of pests all significantly contribute to the development of asthma in children. Many of these triggers are not existent in upper-income communities, where residents have the money to secure their households. These triggers, however, are extremely prevalent in the lower-income housing projects that are home to thousands of American citizens throughout New England. Some of this disparity comes from the pure lack of money. Some stems from profit-seeking landlords. However, another culprit is often overlooked. Many building contractors and inspectors often fulfill their duties to their utmost abilities. The problem lies with the requirements. Many states do not have statewide building codes that sufficiently meet the standards advocated by the ARC which would greatly reduce the level of asthma in these homes. Even if they do have sufficient codes, further problems lie with the inspection and enforcement of these codes.

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## **Methodology**

For this project, law office #11 reviewed the building and sanitation codes within the six New England states (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont), to determine both whether these codes are addressing building and housing standards properly to effectively reduce asthma triggers and how these codes are being enforced by inspectors. Each section had one law office member in charge of researching building standards (Building Committee member) and another member (Sanitation Committee member) in charge of researching sanitation housing standards. All six New England sections researched state and municipality demographic information in order to ensure that various different types of areas (urban/rural) and population sizes were considered. In addition, all sections evaluated whether the state has adopted an asthma plan and how asthma has impacted various socioeconomic and racial/ethnic groups. Neither Committee evaluated the applicable federal standards for section 8 public housing, which is subject to different procedures. This is an area where further research could be done by another law office.

The Building Committee for most New England states reviewed the various building standards provided in the adopted statewide building codes. Most of the states have adopted BOCA and International Building Code (IBC). In addition, the Committees reviewed additional companion codes provided by state amendments, International Mechanical Code (IMC) and International Plumbing Code (IPC), among others. The Committee chose not to review the residential codes applicable to homeowners since the provisions of BOCA and IBC appeared to be more specific. Inspection and enforcement procedures also were evaluated. In terms of field research, most of the Committee members spoke to building inspectors, while some also chose to

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speak with architects and fire marshals. For the ARC and EPA charts (see Appendix 7), relevant state building codes, BOCA, IBC, and state amendments were included.

The Sanitation Committee reviewed whether the states have passed laws regarding housing maintenance and occupancy standards and inspection and enforcement procedures. In addition, the Sanitation Committee chose three municipalities for each state and reviewed whether or not the cities have passed local ordinances regarding minimum housing standards and inspection and enforcement procedures. If both state laws and local ordinances existed, the choice was made to focus more on the local ordinances, as these appeared to be the provisions used by the housing inspectors in terms of enforcement. Three municipalities were selected in an attempt to present a diverse range of communities for each state. Regarding field research, most of the committee members interviewed housing inspectors from each municipality in order to discuss standards regarding enforcement and inspection procedures, asthma awareness and housing standards. The committee members also reviewed landlord-tenant laws to explore the responsibilities of and remedies available to landlords and tenants. Case law research was conducted to see whether cases concerning asthma triggers exist, how the state courts are enforcing the landlord tenant laws and issues regarding housing standards, and the remedies for breach of responsibilities and housing standards. Most of the committee members chose to include only local ordinances in the ARC and EPA charts since these appeared to be the standards enforced most frequently by inspectors. Because the housing codes for most of the municipalities are broad while the ARC and EPA guidelines are very specific, the choice was made to include in the comparison charts (see Appendix 7) any local housing standards that could potentially be related to the guidelines. By creating the charts in this way, the deficiencies

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within the guidelines and codes are more apparent and are useful when doing a cross-analysis between the local codes and guidelines.

## **II. CONNECTICUT**

### **I. Introduction**

Connecticut is a small state with a dense population, boasting 702.9 persons per square mile.<sup>1</sup> Of the 3,425,074 people who reside in Connecticut, 77.5 percent report themselves as White, 9.1 percent as Black or African-American, and 9.4 percent as Hispanic/Latino.<sup>2</sup> This means that it is more densely populated and more diverse than some of the other New England states.

Asthma is a very present health threat in Connecticut. According to the Connecticut Department of Public Health Asthma Initiative, the number of people diagnosed with asthma over the last eighteen years has doubled.<sup>3</sup> While this statistic may be due in part to increased awareness of asthma among doctors, the number of asthma sufferers has undoubtedly grown. As of 2001, approximately 202,000 adults were suffering from asthma in the state, or 7.9 percent of the population.<sup>4</sup> Women had a higher rate than men, with 9.6 percent of women suffering from asthma as opposed to 6.0 percent of men.<sup>5</sup> In a statewide asthma survey, racial and ethnic factors were not found to be significantly linked to asthma rates.<sup>6</sup> People in urban communities were found to have higher rates of asthma, with 9.3 percent of those living in cities suffering

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<sup>1</sup> US Census Bureau, <http://quickfacts.census.gov/qfd/states/09000.html>. This is almost nine times the national average of 79.6 persons per square mile.

<sup>2</sup> *Id.*

<sup>3</sup> Connecticut Department of Public Health, “*Asthma Initiative*” Page 1.

<sup>4</sup> Connecticut Department of Public Health, “*Asthma in Connecticut Update for May 2003.*”

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

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from asthma, while only 7.6 percent living in rural areas did.<sup>7</sup> Low income people in Connecticut suffer from disproportionate rates of asthma. While asthma rates among households making \$25,000 a year and over were between 7.2 and 7.6 percent, the asthma rate in those households making under \$25,000 a year was 11.5 percent.<sup>8</sup>

Younger people, especially children, are particularly affected by asthma in Connecticut. Those in the 18-24 year old age group have asthma rates of 11.5%, compared to only 5.5% for those in the 65+ category.<sup>9</sup> Approximately 75,000 people under the age of eighteen have asthma in Connecticut; 8.9 percent of that population.<sup>10</sup> This difference is even more pronounced in lower income households. Children in households making under \$25,000 per year suffer an asthma rate of 13.5 percent, while those children in households that make over \$75,000 per year are diagnosed with asthma at a 7.2 percent rate.<sup>11</sup> These statistics reveal that the groups suffering the most from the increased asthma rates in Connecticut are poor children and young adults, living mostly in urban areas.

There is a high cost regarding asthma in Connecticut as well. Although the asthma hospitalization rate for children in Connecticut was below the national average, the five largest cities in Connecticut suffer at a rate much higher than the national average.<sup>12</sup> Emergency room visits for children due to asthma are as follows for the targeted municipalities: Bridgeport, 182.7 (per 10,000), Hartford, 271.9, Norwich/Preston, 110.6, and Fairfield, 28.5.<sup>13</sup>

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<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

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Our research on building and sanitary codes and their enforcement has been with this background in mind. We have tried to analyze the codes and their enforcement with an eye towards addressing asthma related issues and improving respiratory health within Connecticut.

### **II. Municipal Overview**

For the purposes of this project, we chose a few municipalities on which to focus our field and municipal health research. We chose two of Connecticut's largest cities, Bridgeport and Hartford, as well as the smaller community of Norwich.

Bridgeport is a city of 139,529 people,<sup>14</sup> making it Connecticut's largest city. Known as the "Park City,"<sup>15</sup> it is an urban city located in the southwest corner of Connecticut. Bridgeport was selected due to its geographic location, which is much closer to the New York City area than the rest of New England, and because of its status as the largest city in Connecticut.

Hartford is the capital city of Connecticut. With a population of 121,578,<sup>16</sup> it is the state's third-largest city and is located in the geographic heart of the state. Due to Hartford's status as the capital, it may have more influence on statewide sanitation and housing policy than similarly situated cities. Yet another reason Hartford was examined lies with its socio-economic background. In 1990, Hartford was the nation's eighth poorest city, with a poverty rate of almost 28 percent.<sup>17</sup> While the median income of Connecticut was over \$49,000 in 1990, in Hartford it was under \$25,000. By 1995, 62 percent of the population in Hartford was living in poverty.<sup>18</sup> Seventy percent of the population is comprised of people of color in Hartford, with 36 percent

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<sup>14</sup> State of Connecticut website, <http://www.ct.gov/ctportal>.

<sup>15</sup> City of Bridgeport official website, <http://www.ci.bridgeport.ct.us>.

<sup>16</sup> State of Connecticut website, <http://www.ct.gov/ctportal>.

<sup>17</sup> Healthy Hartford website, <http://www.healthy.hartford.gov>.

<sup>18</sup> *Id.*

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African-American and 34 percent Latino.<sup>19</sup> Hartford represents a segment of the population that is important to examine in conjunction with asthma.

There is a clear asthma problem in Hartford. A recent report ranked Hartford as the tenth worst “asthma capital” in the country.<sup>20</sup> However there are signs that Hartford is trying to address this problem. According to the Healthy Hartford website, the statistics for asthma in Hartford are:

### By race/ethnicity

Hispanic households	50%
Black (African American, Caribbean/Virgin Islander) households	30%
Non-Hispanic white households	20%

### By economic status

Households in poverty	44%
Other low-income households	32%
Higher income households	25% <sup>21</sup>

Hartford has recognized a link between socio-economic status in its jurisdiction and the prevalence of asthma, and has instituted the Easy Breathing Project as a result.<sup>22</sup> The three goals of the Easy Breathing Project in Hartford are:

- To improve asthma diagnosis by primary care providers

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<sup>19</sup> *Id.*

<sup>20</sup> Allergy and Asthma Foundation of America, “Asthma Capitals.” <http://www.cnn.health.com>.

<sup>21</sup> Healthy Hartford website.

<sup>22</sup> *Id.*

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- To improve how accurately providers determine the severity of asthma and to ensure the appropriate use of anti-inflammatory medicines, and
- To provide better after-hours telephone access to asthma information.<sup>23</sup>

Although there is no specific focus on the housing situation, Hartford has taken an important step in remedying the asthma epidemic. Perhaps this initiative will improve the imaging problems currently facing those suffering from asthma.<sup>24</sup>

Norwich is a smaller sized town in the eastern portion of the state. Norwich was chosen to be representative of the lesser-populated municipalities in Connecticut, as the population of Norwich is 36,177.<sup>25</sup> Calling itself “the Rose of New England,”<sup>26</sup> Norwich is located in the southeastern corner of the state, near Rhode Island. Norwich boasts a median income of \$41,215,<sup>27</sup> significantly higher than that of Hartford. Norwich was chosen for this project as a contrast to the larger urban cities of Bridgeport and Hartford.

### **III. Building Code**

#### **A. State Building Code and Enforcement Structure**

The state of Connecticut has a State Building Code which regulates construction in all municipalities within the state. The Code incorporates the 1996 Building Officials and Code Administrators (“BOCA”) national building code, the 1997 International Plumbing Code, the 1996 International Mechanical Code, and the 2003 International Residential Code for detached one family homes and townhomes. Any changes, amendments, or deletions of these codes are contained in the State Building Code - Connecticut Supplement. All of these codes and their

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<sup>23</sup> *Id.*

<sup>24</sup> Imaging could improve either through other municipalities adopting the approach taken by the capital city of Connecticut, or by convincing judges that breaches of Conn. Gen. Stat. § 47a-7 that negatively affect asthma sufferers are material risks to health, and thus excuse the payment of rent in those situations.

<sup>25</sup> City of Norwich official website, <http://www.norwichct.org>.

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

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amendments, as contained in the Connecticut supplement, are referred to collectively as the 1999 State Building Code.

While the 1999 State Building Code governs the entire state, enforcement of the code is organized primarily on the municipal level. “Building officials” are appointed by the chief executive officer of every town, city, or borough to enforce the code.<sup>28</sup> Building officials serve for a term of four years or until a successor is appointed. These officials have the right of entry into buildings and residences between the hours of 9 AM and 5 PM for the purposes of inspection.<sup>29</sup> Some reasons for inspection are new construction, renovation of existing buildings, an application for a variance, receipt of information from the fire marshal or “any other authentic source” that a building within his or her jurisdiction is “in such a condition as to be a hazard to any person or persons,” or a complaint.<sup>30</sup> Persons who are found to have violated the code are subject to criminal and civil penalties.<sup>31</sup> Penalties can range from \$10 to \$100 a day for each day the violation continues.<sup>32</sup> A person may appeal any decision by the building official to the municipal Board of Appeals.

Decisions by the local building official or Board of Appeals are subject to review on the state level by the State Building Inspector. The State Inspector is appointed by the governor and should be an architect or a professional engineer licensed in the state of Connecticut. This State Building Inspector may issue interpretations of the existing State Building Code and can grant variances or exemptions from the code where “strict compliance with the code would entail practical difficulty or unnecessary hardship.”<sup>33</sup> Any person “aggrieved” by a decision by the

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<sup>28</sup> Conn. Gen. Stat. Ann. §29-260(a).

<sup>29</sup> Conn. Gen. Stat. Ann. §29-393.

<sup>30</sup> Conn. Gen. Stat. Ann. §29-252-1c; Amd. 113.4.

<sup>31</sup> Conn. Gen. Stat. Ann. §8-12.

<sup>32</sup> *Id.*

<sup>33</sup> Conn. Gen. Stat. Ann. §29-254(b).

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Board of Appeals or by the State Inspector can appeal to the Codes and Standards committee within 14 days of the decision.<sup>34</sup> Rulings by the Codes and Standards committee may be appealed to the Superior Court in the district where the premise in question is located.<sup>35</sup>

The State Building Code is an ever-changing document. Municipalities may enact additional legislation governing building, so long as it is not inconsistent with the state code. Any interested person, city, borough, or organization may propose change or amendment to the State Building Code.<sup>36</sup> In fact, Connecticut is currently holding hearings about a proposed change in the Building Code, which would adopt the International Building Code (“IBC”) and its companion mechanical and electrical codes in place of the BOCA 1996 Building Code.<sup>37</sup> This change would go into effect next year. While the effect of such changes is not clear yet, a discussion of the International Building Code can be found in the New Hampshire section (Section V, Building Code) as New Hampshire adopted the IBC a few years ago.

As discussed above, Connecticut has adopted the 1996 BOCA National Building Code as its building code, along with the 2003 Residential Code and the International Code Council’s Plumbing and Mechanical Codes. We have obtained copies of the BOCA code, as well as the Plumbing and Mechanical codes.<sup>38</sup> We have also been able to obtain a copy of the 2003 Residential Code, which pertains to detached one and two family homes. However, according to several sources, the Residential Code is essentially consistent with the BOCA guidelines, but written in less technical terms so that homeowners can understand it more easily.<sup>39</sup>

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<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> Conn. Gen. Stat. Ann. §29-252.

<sup>37</sup> Dept. of Public Safety, “Notice of Intent to Amend Regulations.” February 2004.

<sup>38</sup> The Plumbing and Mechanical codes referenced are from 2000, although Connecticut has adopted the 1997 version. Because the codes are updated every year, libraries do not keep the older codes, so the 2000 version is closest one available to that used in Connecticut.

<sup>39</sup> See interviews with Norwich Building Official, Hartford Building Official, and Hank Reisen, architect.

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### **B. Analysis of Building Code Compared to ARC/EPA Guidelines**

There are various sections of the State Building Code which pertain to asthma and respiratory illnesses. Generally, asthma-related provisions of the code relate to ventilation, moisture, or pests in the home. The section below compares some of the more relevant sections of the Connecticut Building Code with the “healthy home” guidelines set forth by the EPA and the ARC. A more detailed comparison can be found in chart form in Appendix 7-A-I.

One crucial factor in preventing asthma attacks and promoting healthy respiration is a well-ventilated interior environment, and the BOCA Building Code contains various provisions regarding interior spaces. All rooms intended for human occupancy must be ventilated in some way, whether natural or mechanical.<sup>40</sup> Natural ventilation can be “through windows, doors, louvers, or other natural openings to the outdoor air.”<sup>41</sup> The openable area must be at least four percent of the floor area being ventilated, meaning that adequate ventilation is measured by total floor space. This ratio is doubled when there is an adjoining area with no opening to the outside.<sup>42</sup> These provisions are more specific than ARC guidelines in terms of overall ventilation requirements. Similarly, the provisions of the code regarding ventilation of attics and rafters are quite good, requiring cross ventilation to ensure that gasses from insulation and other building materials have a means of escape.<sup>43</sup>

The Building Code requires that where there is no form of natural ventilation, mechanical ventilation must be provided in accordance with the Mechanical Code. Neither the BOCA Building Code nor the Mechanical Code seems to specify what kind of ventilation system is necessary to compensate for lack of proper natural ventilation. The Mechanical Code does

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<sup>40</sup> Building Officials & Code Administrators International, Inc. “BOCA National Building Code 13<sup>th</sup> Edition” 1996.

<sup>41</sup> BOCA Code §1208.1.

<sup>42</sup> BOCA Code §1208.2.

<sup>43</sup> BOCA Code §1210.0.

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contain specific requirements for mechanical ventilation in certain areas of the home. It requires that clothes dryers must have exhaust ducts, made of smooth metal, and must release air to the outside.<sup>44</sup> This is consistent with ARC's recommendation that all forced ductwork be sealed. In kitchens, range hoods and other appliances with downdraft exhaust must discharge to the outdoors through air-tight ducts.<sup>45</sup> However, the Building Code as a whole does not appear to require that all stoves be equipped with fans, which ARC suggests as a means of removing moisture and odors from kitchens. Another area where the code could be improved to meet ARC's standards is by specifying that all bathrooms should contain exterior exhausting fans.

In general, the Building Code is very concerned with moisture accumulation, and bathrooms are one of the most moisture-prone areas of the home. The Building Code requires that bathroom floors, walls, ceilings, doors, etc. be of a material that is easily cleaned, although it does not explicitly bar the use of carpet on bathroom floors as ARC and EPA suggest.<sup>46</sup> Bathroom floors and sidewalls "should be water tight to a height of at least five inches above the floor."<sup>47</sup> Showers and sinks must be made of a smooth, non-corrosive material.<sup>48</sup> In the shower, this material should rise at least six feet from the floor level and form a water-tight joint with the adjoining wall and the tub, so that none of the area around the shower or tub will sustain water damage.<sup>49</sup> This specification of what kind of material to use in bathrooms and how to enclose the tub area is more specific than the ARC guidelines. The Building Code is also consistent with ARC guidelines in that it suggests that bathroom walls be built with a layer of water-resistant

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<sup>44</sup> International Code Council, "International Mechanical Code" 2000. §504.6.

<sup>45</sup> Asthma Regional Council "Healthy Homes Guidelines."

<sup>46</sup> BOCA Code §2907.1.

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> BOCA Code §2907.4.

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gypsum board (wallboard) to prevent the accumulation of moisture in the inner walls; ARC recommends not using moisture-wicking gypsum board in bathrooms.<sup>50</sup>

The Code also contains regulations designed to avoid the accumulation of moisture or water damage in exterior walls as well. BOCA requires that walls be faced with weather-resistant covering “that is properly attached to resist wind and rain.”<sup>51</sup> There are specific provisions depending on the kind of material used for the outside walls (wood, aluminum, brick, etc.). Where necessary, the walls must also have “an interior noncorrodable vapor retarder” or some other means “to avoid condensation and leakage of moisture.” Thus, walls must prevent moisture from entering on the outside and contain building materials which would discourage moisture buildup if water does enter.<sup>52</sup> If crevices or pockets in exterior walls in which moisture could accumulate cannot be avoided, then these pockets must be equipped with caps, drips, or some other means by which to avoid water damage.<sup>53</sup> These provisions are much less specific than the ARC guidelines which specify how to install claddings and flashings around windows and other areas that may leak from the outside.<sup>54</sup>

The Code requires that foundation walls be waterproofed in all buildings that will be occupied by people. These requirements vary depending upon whether or not the basement or foundation is below or above ground (or “grade”). Foundations should be surrounded by gravel, through which water can percolate, and a pipe or drain should be placed at the bottom of the foundation sloping away from it to prevent any water from collecting around it.<sup>55</sup> However, the Code does not specify how far away from the foundation this water should drain, which could

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<sup>50</sup> BOCA Code, §2503.4.

<sup>51</sup> BOCA Code, §1403.3.

<sup>52</sup> *Id.*

<sup>53</sup> BOCA Code, §1405.3.9.

<sup>54</sup> Healthy Home Guidelines.

<sup>55</sup> BOCA Code, §1813.1-1813.5.3.

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lead to water being deposited too close to the house and accumulating there. This is an area where a small specification could greatly improve the Code's effectiveness.

The final area of interest in regard to asthma triggers is the provisions against pests set forth in the Building Code. The Code requires that where the building has an apron around the foundation, it cannot terminate below the lower edge of the siding material, to prevent rodents from entering at the foundation level.<sup>56</sup> Wall-openings or aprons required for ventilation must "have corrosion and ratproof shields."<sup>57</sup> The Code also specifies that all pipe and cable openings "should have snugly fitted collars to eliminate all open spaces" and therefore prevent animals from entering them as well.<sup>58</sup> All of these provisions are essentially consistent with the ARC and EPA guidelines.

Thus, while there are some clear places in the Code that could be improved to meet the ARC and EPA guidelines (such as prevention of moisture entering from the outside), it is largely consistent with these guidelines. The Code contains numerous provisions designed to promote well-ventilated, mold, moisture, and pest-free homes. This seems to imply that problems arise either in the installation/implementation of the Code or in its enforcement.

### **C. Field Research Building Inspectors**

The field research portion of this project has been challenging in that building inspectors are almost always out of the office on inspections and are difficult to reach. This is also true of first year law students who spend most of the day in class. For this reason, only two Connecticut building inspectors have been interviewed. Interviews with a social worker and an architect in

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<sup>56</sup> BOCA Code, §1215.2.1.

<sup>57</sup> BOCA Code, §1215.3.1.

<sup>58</sup> BOCA Code, §1215.3.3.

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the state of Connecticut have provided other perspectives on the issue of asthma and respiratory health within the state.

The building official for Norwich was interviewed in connection to this project.<sup>59</sup> He said that building inspections in Norwich are divided into two categories; inspections of new buildings and inspections of existing buildings. This is not true of other municipalities in Connecticut in which any inspections of existing buildings are done by the Health Department.

Existing buildings in Norwich must be in compliance with the Property Maintenance Code, which was developed through municipal legislation. As the Norwich Building Official explained, until very recently this meant that all existing buildings had to have a Certificate of Occupancy, which was issued every three years. Because of this requirement, an inspector would be sent in to inspect all buildings every three years before another Certificate was issued. He said that inspectors would look for “leaky plumbing, structural problems, cockroaches, rodents, and general sanitation” issues.<sup>60</sup> However, due to budget cuts, Norwich is no longer demanding that all buildings be inspected every three years. Under the new system, existing buildings will only be inspected if they have received a complaint from a tenant or a neighbor, or if, from the outside, the building looks as though it should be inspected. This change will undoubtedly reduce the number of existing buildings that are inspected.

The Norwich Building Official stated that if an inspector finds a problem or violation with an existing building he or she will generally issue an Order of Compliance, which would give the owner a specified time period (usually 30 days) in which to correct the violation. If the necessary changes are not made within that time frame, then the building department can issue a

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<sup>59</sup> Interview with Norwich Building Official, February 10, 2004, 9:15 AM.

<sup>60</sup> *Id.*

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summons. These summonses are typically \$50 a day until the violation is corrected – an expense which usually prompts compliance.

Inspections of new buildings are generated automatically, whenever someone applies for a permit to build or remodel. The Building Official said that generally these inspections are more straightforward than those of existing buildings because inspectors are looking purely for compliance with the BOCA and/or residential codes. In his opinion, the Residential Code is not very different from BOCA '96, but is more accessible to the layperson.

The Norwich Building Official stated that in his view, inspectors do not prioritize certain aspects of the code, but enforce all of them. If an inspector sees a problem or something which does not conform to the Code, he or she will refuse to issue a Certificate of Occupancy until the violation is corrected. This process effectively takes care of most problems that the inspectors see because people cannot use or occupy a building without such a Certificate, and they will not issue a Certificate unless there is compliance with the code.

In terms of asthma and respiratory illnesses, the Norwich Building Official stated that what inspectors will definitely look for is ventilation and air circulation. He referenced the BOCA standards which specify the amount of air flow necessary per square foot in every room. Generally, he stated that all rooms should have windows that open to the outside, and ones that do not should have fans or some form of mechanical ventilation. The Building Official stated that in a bathroom, he looks for either an openable window or mechanical ventilation and an impervious surface on the floor and fixtures. In his mind, issues of mold growth are more of a concern in the inspection of existing buildings. In particular, he said that they have had several instances in which inspectors have found mold and ventilation issues in basement bedrooms.

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The Norwich Building Official verified that Connecticut is in the process of changing its building codes. In his view, there are two reasons for this change. The first is that owners of existing buildings feel that BOCA is too stringent and it is often very difficult for them to bring old buildings into compliance. The second reason is that there are some conflicts between the BOCA code and the Fire Safety Code, which have created confusion among inspectors and debates between those in the state who feel that fire safety should be of paramount importance and those who are more concerned with other health issues.

The Building Official for the City of Hartford was also interviewed for this project.<sup>61</sup> He stated that his department also inspects both new and existing housing. As in other municipalities, many inspections are triggered by the application for a building permit to build a new home or to add on to an existing one. However, the Hartford Building Official stated that his office also receives a lot of complaints from individuals or neighborhood groups about unsafe or unsecure buildings, pests, leaks, and other problems. In his view, more and more of their inspections are coming from this type of complaint. When asked why he believes there has been this rise in complaints, the Hartford Building Official said that he thinks there may be more awareness among community groups, and pointed out that often the complaints are “meritless” and “arise out of a landlord-tenant dispute” or come from people who are being evicted.<sup>62</sup>

Hartford also has a Health Department, which the Building Official said is more likely to deal with issues like mold or pests in the home. Nonetheless, there is some overlap in the departments. One example the Hartford Building Official gave is that in a wet year like this, his department gets a lot of calls about leaky roofs and water damage; problems which can lead to mold. He said that sometimes his department will be called into homes with rodent problems as

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<sup>61</sup> Interview with Hartford Building Official, March 17, 2004, 4 PM.

<sup>62</sup> *Id.*

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well. Generally speaking though, the Hartford Building Official stated that his inspectors are primarily looking for durability of buildings and fire safety when inspecting new or existing homes. When asked what else inspectors looked for beyond these obvious concerns, the Hartford Building Official said "we're looking for code compliance" and would not specify what aspects of the Code in particular.<sup>63</sup> He said that the openable window and mechanical ventilation requirements of the Code would pertain to asthma, but could not think of any other provisions of the Code that specifically relate to asthma triggers. The Hartford Building Official has received no asthma training, nor have any of his inspectors been trained.

The Hartford Building Department is seriously understaffed at the moment. The Inspector said that there are currently three full time building inspectors on staff, two electrical inspectors, and two inspectors who go out on heating complaints. The Hartford Building Official approximated that there were twice that number on staff last year but "due to budget cuts and a few retirements", many inspectors were gone. This means that those remaining inspectors are constantly busy – a fact which might explain the Hartford Building Inspector's apparent annoyance at the rise in tenant complaints.

Although numerous attempts were made to contact the Bridgeport Building Official, neither he nor any of the inspectors ever seemed to be in the office. They did not return messages. This may be because, according to the Hartford Building Inspector, Bridgeport has also suffered from budget cuts and is already a "blighted area," with all of the health and housing problems that go along with being a poor and post-industrial urban area.

In summary, although the inspectors interviewed work in very different areas, their interviews revealed several commonalities. The first is that building departments across Connecticut seem to be suffering from budget cuts and are therefore understaffed. In Norwich,

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<sup>63</sup> *Id.*

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this means that existing buildings are no longer inspected routinely. In Hartford, it means that the staff of inspectors has been cut in half. While we cannot say this for a fact, this lack of staff and funding suggests that the inspectors may not be doing the detailed kinds of inspections necessary to pick up on many asthma triggers. Moreover, while asthma is a growing crisis in Connecticut, the building officials interviewed had not received asthma training and did not seem to see asthma as pertaining to their job.

### **D. Other Field Research Perspectives**

Laura Phelan, a social worker for the Department of Children and Family Services in Hartford, was interviewed about her experience with asthma among the populations she works with.<sup>64</sup> Phelan has been a social worker for the state of Connecticut for eight years. She said that a “huge number” of the children she works with have asthma, and always carry an inhaler or medicine.<sup>65</sup> She estimated that in her current group of clients, perhaps half have asthma. Phelan said that she had worked in the more rural area around Middletown for several years and that asthma is not such a problem there. When she returned to the Hartford office last year, she was shocked to remember “how it seems like every kid in Hartford has asthma.”<sup>66</sup> When asked what she thinks accounts for this difference in asthma levels between this urban and a more suburban/rural population, Phelan said that the main difference she can see is that many of the children in Hartford live in crowded apartments with cockroaches and rats. In the Middletown area, housing is less crowded and on a smaller scale. Another factor Phelan pointed out is that Hartford is much closer to New York City and New Jersey and the air pollutants from those areas. As Phelan also pointed out, the parents of low-income children may not be educated as to how to minimize the effects of their children’s asthma. One example of this that she provided is

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<sup>64</sup> Interview with Laura Phelan, February 24, 2004 at 6 PM.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

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that many of the children she works with suffer from asthma, but have parents who continue to smoke.

Phelan has attended mandatory asthma training “at least once.” She said that when she was first becoming a social worker, she did not understand the problem, but that now she believes such training is crucial for social workers in Connecticut. Phelan said that for her the saddest thing is that “when my kids leave the city and go for treatment they barely use their inhalers or anything, but within a week or so of coming back they are sick again.”

Another person interviewed in regard to this project was Hank Reisen, an architect working in Connecticut and Massachusetts.<sup>67</sup> When asked about the recent rise of asthma and its relation to housing and building, Reisen cited several trends he has noticed in the more than twenty years he has been practicing in New England. One thing he noted is that while older windows and doors tended to leak air, the ones which are installed in newer construction are essentially airtight. This leads to decreased ventilation and air circulation. Thus, when a new building is built now, the vapors from the carpeting, paint, insulation, furniture, etc. do not simply leak out over time, but rather stay within the structure. Reisen said that air circulation can be created through controlled mechanical ventilation. The most basic kind of mechanical ventilation expels moist air from the kitchen and bathroom through an exhaust duct and brings in outside air through smaller ducts located around the home. Another type of ventilation, called a vapor transfer system, takes air from the kitchens and bathrooms to a contained area where it is mixed with air from the outside, and then circulated through the house. This technique is more energy efficient in colder climates because all of the warm air is not lost. Reisen said that these systems will lead to much greater ventilation and “generally very healthy homes.”<sup>68</sup>

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<sup>67</sup> Interview with Hank Reisen, March 4, 2004, 7:30 PM.

<sup>68</sup> *Id.*

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In existing homes, ventilation tends to be less of a problem; however, Reisen said that there are often issues of condensation and mold growth. One obvious area of concern is old basements, which tend to be damp. Another issue arises in buildings which was built without vapor barriers or where the vapor barriers were installed incorrectly. As Reisen explained it, a vapor barrier is a layer of plastic which is placed between an inside and an outside wall. The plastic should be placed on the warm (inside) side of the wall so that when cold air from the outside hits the warmer wall, it will not create condensation (thus promoting mold growth). Reisen said another common situation in which he has seen mold growth or damp walls is in older buildings in New England in which the insulation was installed years after the original construction. The presence of certain kinds of insulation can sometimes make a wall which had previously been ventilated become airtight and mold-prone, since rather than evaporating, the condensation is now trapped within the wall.

When asked about the Connecticut Building Code, Reisen said that he thought that it was a pretty good code and that in his experience, most of the codes are very similar. He said that in the past decade, many of the changes in the code have been energy related, but that recently there has been a growing health-related awareness. Reisen said that in his experience, he thought that most building inspectors know the code, but that they rarely “crawl around the basement or attic making sure that everything is up to code.”<sup>69</sup> Reisen also pointed out that the timing of inspections is crucial in that if an inspector comes to what is essentially a finished residence, there are things about the construction, insulation, and damp-proofing that an inspector will not be able to see. Thus, in Reisen’s mind the problems that lead to asthma and other health-related issues are often related to inadequate inspection and/or faulty construction or installation. An example he gave of this type of situation is that a drainpipe placed at the foot of the foundation

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<sup>69</sup> *Id.*

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could be placed a little too close to a house, or at the wrong angle, and while the mistake would likely be subtle enough to pass an inspection, it could create huge problems of moisture and flooding in a short time.

Reisen stated that he does not design low income housing; however, he is aware that asthma is a greater problem in lower income communities. Reisen stated that he could not say why this would be true, pointing out that most state-subsidized low income housing is built in strict observation of the code and is relatively new; however, he did say that the materials used might contain more out-gassing chemicals. One example of this is cheap carpeting, which is an inexpensive way to cover a lot floor space but out-gasses more fumes than higher quality carpeting and, like all carpeting, traps moisture inside. One solution to the problem of carpeting would be to install better mechanical ventilation systems to keep the moisture and fumes from being trapped inside. Another example of problematic materials is inexpensive gypsum board, which Reisen pointed out would meet the Code but would not provide the same water resistant qualities that a better board would. These issues would be addressed if the Code were changed to specify what kinds of materials had to be used in construction. However, this change would drive up the cost of construction, which in turn would affect the cost of housing. Given the huge problem of the lack of affordable housing that already exists in Connecticut, we must be wary of any solution which would result in increased housing costs.

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## IV. Sanitation Code

### A. Overall State Statutes

There is no statewide housing or sanitation code in Connecticut.<sup>70</sup> Individual municipalities regulate housing and sanitation issues within their own jurisdictions, and establish their own individual housing and sanitation policies. However, the Landlord and Tenant Act, codified at statute § 47a, directly relates to housing and thus has an impact on the nature of municipal codes across the state.

The Landlord and Tenant Act regulates and codifies the duties of the respective parties. Most relevant to this project is Statute § 47a-7(a) and § 47a-7(b), which regulates the landlord's duties.<sup>71</sup> This provision requires landlords to comply with the Tenement House Act<sup>72</sup> and maintain "electrical, plumbing, sanitary, heating, and ventilation."<sup>73</sup> Additionally, § 47a-7(b) requires that if a municipal code should impose a greater duty upon a landlord, then he is responsible for that greater duty.<sup>74</sup>

This provision becomes an issue most notably in cases where the tenant has failed to pay rent, and claims that the leased premises are unfit for human habitation. Connecticut Courts have allowed an implied warranty of habitability to be used as a special defense to non-payment of rent in such cases.<sup>75</sup>

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<sup>70</sup> There is a Public Health Code in Connecticut, Conn. Gen. Stat. § 19a-2a, but it does not focus specifically on housing issues.

<sup>71</sup> See Appendix D-I for the language of the statute.

<sup>72</sup> The Tenement House Act, Conn. Gen. Stat. § 19a, requires that tenement houses, defined as any house or building which is let out, adhere to the state building code.

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

<sup>75</sup> *Urban v. Prims*, 35 Conn. Supp. 233, 236 (CT 1979).

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The general rule when a tenant claims a breach of the implied warranty of habitability in Connecticut is that the breach must “materially” affect the tenant’s health.<sup>76</sup> In the case of *Tankus v. Genta*, the tenant filed an action against his landlord because he had failed to properly deal with a cockroach infestation.<sup>77</sup> Even though the landlord responded by spraying the apartment,<sup>78</sup> the infestation continued to worsen.<sup>79</sup> Eventually, plaintiff Tankus left his apartment and refused to pay any further rent. He sued the defendant for damages related to his moving and the destruction of his personal property by the infestation.<sup>80</sup>

The Court in *Tankus* started their analysis by stating that statute § 47a-7(a) has “been construed as providing a statutory warranty of habitability upon which a tenant’s obligation to pay rent is contingent.”<sup>81</sup> The Court next concluded that while local housing codes could be used to determine a breach of the warranty as defined under statute § 47a-7, “Not every code violation is ipso facto a violation of 47a-7, an infestation that is sufficiently severe to warrant a finding that it is capable of materially affecting the tenant’s health and safety is a breach of statutory warranty.”<sup>82</sup> Thus, Tankus was able to succeed on his claim because the Court found that a cockroach infestation was severe enough to materially affect the tenant’s health and force a constructive eviction due to the circumstances.

*Tankus* leaves unanswered questions about constructive eviction and what makes a health code violation material. *Malapetsas v. Spencer*<sup>83</sup> answers the first question. In *Malapetsas*, the

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<sup>76</sup> *Tankus v. Genta*, 1986 Conn. Super. LEXIS 164 (October 23, 1986), at 8. The following cases are unpublished opinions referenced from the Connecticut Annotated Statutes.

<sup>77</sup> *Id.*

<sup>78</sup> Landlord Genta sprayed plaintiff’s apartment several times after the infestation was reported, but he refused to do “something major” as was requested by the tenant. *Tankus* at 2.

<sup>79</sup> “Cockroaches appeared throughout the kitchen, on the plaintiff’s bed, and in his clothing. The situation had become intolerable for the plaintiff.” *Id.*

<sup>80</sup> *Id.*

<sup>81</sup> *Id.* at 8.

<sup>82</sup> *Id.*

<sup>83</sup> *Malapetsas v. Spencer*, 1979 Conn. Super. LEXIS 276 (February 14, 1979).

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landlord brought an action for non-payment of rent against the tenants, who in turn claimed that the plaintiff had violated statute § 47a-7 by failing to remedy a vermin infestation, a leaking sink, a defective furnace, and a lack of storm windows.<sup>84</sup> The Court found for the plaintiff, citing as one of its reasons the fact that the tenants had lived in that apartment for two years before the incident occurred. The Court stated that in order to utilize the provisions of statute § 47a-7,

The tenant must abandon the property within a reasonable time. It is the rule in our State that where after the acts alleged to constitute constructive eviction, the tenant continues to pay or tender the rent, this then becomes a clear indication that the tenant has elected not to treat the landlord's conduct as an eviction.<sup>85</sup>

Furthermore, the Court held that the two years spent by defendants at the residence was “[t]antamount to a waiver” of the warranty.<sup>86</sup> Thus, a tenant has a limited window of opportunity to leave the residence before the ability to claim a breach of the implied warranty of habitability is closed.<sup>87</sup>

Answers to the question of what constitutes materiality can be found in a string of cases starting with *W-E Associates v. Sanchez*.<sup>88</sup> In *Sanchez*, the Court found that the violations claimed by the defendant tenant were relatively minor. “There was no evidence from anyone that those violations materially affected the health or safety of the occupants. Only orders for such conditions are within the scope of [statute 47a].”<sup>89</sup> The Court explained its reasoning on this issue as a desire to limit the kinds of violations that would be serious enough to qualify as a breach of the implied warranty of habitability, as the intent of the Legislature was not to allow

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<sup>84</sup> *Id.* at 2.

<sup>85</sup> *Id.* at 5.

<sup>86</sup> *Id.*

<sup>87</sup> This window would appear, according to *Malapetsas*, to be considerably less than two years. However, it should be noted that a tenant is also required to give her landlord notice of any problems, and allow the landlord time to fix these problems. One can assume that after the time given the landlord to make repairs has lapsed, it is then appropriate to leave the apartment due to “constructive eviction.”

<sup>88</sup> *W-E Associates v. Sanchez*, 1986 Conn. Super. LEXIS 122 (September 15, 1986).

<sup>89</sup> *Id.* at 3.

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every housing code violation to result in non-payment of rent.<sup>90</sup> Materiality must therefore be very serious, although *Sanchez* does not define what level is appropriately serious. This, it seems, must be determined by the courts on an individual basis.

One aspect of what constitutes a material breach is answered in *Mancel Associates v. Williams*.<sup>91</sup> In this case, the Court found no material risk to the tenant due to a drainage backup.<sup>92</sup> The Court here finds that because the tenant was responsible for the drainage backup, the landlord cannot be held liable when he acts in a reasonable manner.

This Court is not faulting the defendant in any way for her refusal to accept a most obnoxious condition. On the other hand, having found a reasonable effort on the part of the landlord to remedy the situation which was not caused by him, this Court cannot find a dereliction on his part which created the health or safety hazard.<sup>93</sup>

Thus, one part of the materiality definition must include a risk to health created by the landlord, and not by the tenant.

The final piece to what constitutes a material health risk is that city and state officials must be involved in the process before the issue goes to court. In *Jacobson v. Johnson*<sup>94</sup> the Court found that allegations of rodent and insect infestations, plumbing and electrical problems, along with broken windows and holes in the walls could not be sustained, in large part because there were no “health or housing code officials to corroborate [tenant’s] contention.”<sup>95</sup> The rule from *Jacobson*, therefore, is that city officials must first be brought in to inspect the disputed

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<sup>90</sup> *Id.* at 4.

<sup>91</sup> *Mancel Associates v. Williams*, 1982 Conn. Super. LEXIS 279 (December 21, 1982).

<sup>92</sup> *Id.* at 3.

<sup>93</sup> *Id.* at 2.

<sup>94</sup> *Jacobson v. Johnson*, 1982 Conn. Super. LEXIS 387 (September 8, 1982).

<sup>95</sup> *Id.* at 2. The Court in *Jacobson* also indicated that these violations may not be “substantial” code violations. Asthma was not mentioned within the text of the opinion (and was probably not argued), but it is instructive to note that plumbing problems, rodents, and holes in the wall could all be major problems for an asthma sufferer.

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premises before a claimed breach of the implied warranty of habitability can be successful.<sup>96</sup> This rule is further expanded in *Ziobro v. Vasquez*.<sup>97</sup> Plaintiff landlord brought an action for non-payment of rent against tenant Vasquez. Vasquez asserted that water damage from a leaky toilet and a small rat infestation, along with the failure by the landlord to install smoke detectors, constituted a breach of the implied warranty of habitability. The Court made clear its rule regarding the involvement of city and state officials by saying “Unilateral, self-serving declarations by the tenant alone that the hazardous conditions exist are not sufficient; the tenant should utilize the broad range of municipal boards, agencies, and commissions to substantiate the reasons for withholding rent.”<sup>98</sup> The Court then modified this all-or-nothing approach by saying “When the evidence does establish such a serious violation of Section 47a-7, a defense to a summary process or other action which is based on non-payment of rent will prevail.”<sup>99</sup> A defense based on the landlord’s breach of non-payment of rent can succeed even without city involvement, but the Court strongly encourages such involvement.

In *Ziobro*, the Court found that the leaky toilet and the rat infestation were material risks to the tenant’s health, but that the landlord adequately remedied the problem.<sup>100</sup> The tenant’s defense eventually succeeded in spite of this finding, due to the lack of smoke detectors in the apartment. The Court seemed to reach the conclusion that noted asthma triggers such as standing water and rodents were not serious enough to justify non-payment of rent, but the lack of smoke detectors and the subsequent risk of death in the event of a fire were much more severe. One

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<sup>96</sup> Although not directly mentioned by the Court in this or other cases, it seems that the reason for this rule is not only about notifying the landlord and attempting to remedy problems, but also to provide evidence of any breaches that may have occurred.

<sup>97</sup> *Ziobro v. Vasquez*, 1983 Conn. Super. LEXIS 585 (January 3, 1983).

<sup>98</sup> *Id.* at 7.

<sup>99</sup> *Id.* at 8.

<sup>100</sup> The adequate remedy in this case was to put a temporary patch over the hole causing the leakage and “spread rat poison.” *Ziobro* at 3. This remedy was held to be adequate because the landlord knew the tenant was moving out soon, and he did not want to make extensive repairs until the apartment was vacant.

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problem in using non-payment of rent by asthma sufferers in substandard residences may be that courts may not view asthma as a serious problem worthy of legal protection. Thus, while the law provides a possible remedy in situations where a landlord is in violation of a housing code that may increase the risk to asthma sufferers, the judges implementing that law may not see these violations as worthy of their protection.

In addition to landlord responsibilities, the Landlord and Tenant Act also outlines basic tenant responsibilities in statute § 47a-11. Sections 47a-11(a) through § 47a-11(e) are the relevant portions for this project.<sup>101</sup> Thus, a tenant is also required to adhere to the city housing codes, as well as maintain a generally safe and clean environment. This section mirrors the requirements set out by the Connecticut Court in *Mancel* that the tenant not create any situations that would lead to material health risks.

Finally, the Landlord and Tenant Act, at § 47a-57, requires Certificates of Occupancy for apartments according to statutes § 47a-57(a).<sup>102</sup> This provision impacts the housing and sanitation situation in Connecticut because each municipality is responsible for the issuance of these Certificates, requiring the cities to enact ordinances and regulatory schemes designed to meet this requirement. Based on the field research gathered from the individual municipalities, it seems that this mechanism triggers a large percentage of the inspections across the state.<sup>103</sup> At this point, it is appropriate to more closely examine the role that individual municipalities play in Connecticut housing.

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<sup>101</sup> See Appendix D-I for the language of the statute.

<sup>102</sup> See Appendix D-I for the language of the statute.

<sup>103</sup> Along with complaints from individuals.

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## B. Municipal Research

Due to the lack of a statewide sanitary or housing code in Connecticut, it is necessary to examine the municipal codes that regulate the majority of the housing in the state. For this project, three municipalities were chosen as representative of the state: Bridgeport, Hartford, and Norwich.<sup>104</sup>

It is also necessary at this point to disclaim that, due to the time constraints of the project, federally funded public housing run by local housing authorities was not included in this research. However, interviews with different sources reveal that the major problem in this area is older housing. Statewide, some public housing stock is 40 to 50 years old.<sup>105</sup> In Norwich, there has been no new public housing built since 1980.<sup>106</sup> Although no comprehensive research was undertaken to examine the plight of asthma sufferers in these situations, it would seem that a major contributor to the problem is simply the age of the buildings.

### Bridgeport

Bridgeport has adopted its own municipal housing code, found in Title 15, Chapter 12 of the City of Bridgeport Municipal Code. There are several provisions of this code that relate to asthma and asthma triggers.

The first relevant section of the Bridgeport Housing Code is § 15.12.030, Inspections.<sup>107</sup> § 15.12.030 allows inspectors to enter and inspect the premises. However, the rest of this section only discusses lead-paint inspections, which seems to be the primary focus of this particular section. Despite the overall focus of this section on lead-paint concerns, Part (D) references

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<sup>104</sup> These three cities were chosen in an attempt to gain a better understanding of the state as a whole, both in terms of geography (each are from a different part of the state), and size (Norwich is considerably smaller than either Bridgeport or Hartford). A more detailed explanation for why each city was chosen is included in the discussion of that municipality's housing codes.

<sup>105</sup> Interview with Connecticut Department of Economic and Community Development, March 15, 2004.

<sup>106</sup> Interview with Norwich Housing Authority, March 2, 2004.

<sup>107</sup> See Appendix D-I for the language of the statute.

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§ 15.12.150, which directly affects asthma-triggers (discussed below in more detail), making § 15.12.030 relevant to asthma-related housing concerns in Bridgeport.

Two other provisions of this code may be especially relevant to the regulation of asthma triggers. These are §§ 15.12.150, General Requirements Relating to the Safety and Sanitary Maintenance of Parts of Dwelling and Dwelling Units, and 15.12.220, Extermination Standards.<sup>108</sup> Section 15.12.150 focuses especially on the conditions of the premises being “weathertight, watertight and rodent-proof.”<sup>109</sup> This theoretically should act as a deterrent against rodents and some conditions that might create mold, and thus safeguard against asthma. Parts (D), (E) and (G) also provide some protection against water, which can cause mold issues and trigger asthma. Implemented correctly, § 15.12.150 could be a great help towards fighting asthma.

Section 15.12.220, Extermination Standards, could also help reduce asthma problems by reducing the numbers of pests that can aggravate the condition of asthma sufferers. This section of the Bridgeport Housing Code requires that the individual occupant of the premises is responsible for maintaining a rodent-free environment.<sup>110</sup> In a situation in which only one dwelling out of a multi-dwelling complex is affected with rodents, then it is the responsibility of the affected occupant to rid her dwelling of pests. However, § 15.12.220 goes on to state that:

Notwithstanding the foregoing provisions of this section, whenever infestation is caused by failure of the owner to maintain a dwelling in a ratproof or insectproof condition, extermination shall be the responsibility of the owner. Whenever infestation exists in two or more of the dwelling units in any dwelling, or in the shared or public parts of any dwelling containing two or more dwelling units, extermination thereof shall be the responsibility of the owner.<sup>111</sup>

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<sup>108</sup> See Appendix D-I for the language of the statutes.

<sup>109</sup> Municipal Code of Bridgeport § 15.12.150(A) and (B).

<sup>110</sup> Municipal Code of Bridgeport § 15.12.220.

<sup>111</sup> *Id.*

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Thus, the burden of ridding the dwelling of rodents falls to the party that caused the problem.<sup>112</sup>

This is consistent with the rule in landlord-tenant disputes that the tenant cannot create the material health risk.<sup>113</sup> If implemented properly, § 15.12.220 could cut down the numbers of rodents affecting the health of asthma sufferers.

Several other sections of the Bridgeport Housing Code have the potential to affect the health of asthma sufferers by reducing asthma triggers, though perhaps to a lesser degree than §§ 15.12.150 and 15.12.220. Minimum Standards for Basic Equipment and Facilities, § 15.12.090, may impact asthma triggers in that requirements regarding kitchen sinks, lavatories, bathing facilities, water connections, and rubbish and garbage disposal are laid out. However, these requirements are very basic<sup>114</sup> and do not seem to be of much help. Additionally, these facilities are required to be “installed and maintained in a manner prescribed by the ordinances, rules and regulations of the city.”<sup>115</sup> As § 15.12.090 is part of the ordinances, rules and regulations of the city of Bridgeport, this requirement seems vague and circular.

Section 15.12.100, Minimum Standard for Light, Ventilation, and Heating, also may impact the asthma problem, specifically the provisions regarding ventilation. Section 15.12.100(B) requires each room in a dwelling to have “at least one window or skylight which can easily be opened, or such other device as will adequately ventilate the room.”<sup>116</sup> This standard seems very low in terms of providing air quality, and probably would not help anyone suffering from asthma.

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<sup>112</sup> It seems that rodents in multiple dwellings is evidence that the landlord is responsible for the infestation.

<sup>113</sup> See the discussion of *Mancel Associates v. Williams*, *supra*.

<sup>114</sup> These require that facilities exist rather than an objective standard of their working conditions. The only requirements regarding the standard of the facilities are that kitchen sinks, lavatories, bathing facilities, and water-heating facilities be in “good working order.” This seems to be a very subjective standard without any further definition of this term.

<sup>115</sup> Municipal Code of Bridgeport § 15.12.090.

<sup>116</sup> Municipal Code of Bridgeport § 15.12.100.

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Section 15.12.170, Responsibilities of Owner Generally, and § 15.12.180, Responsibilities of Occupant Generally, mirror statute § 47a-7 and § 47a-11 outlining landlord and tenant responsibilities. The Bridgeport Housing Code requires owners to maintain a “clean and sanitary condition” of both the common areas and the premises.<sup>117</sup> The same language is used for occupants, in that they are required to maintain a “clean and sanitary condition ... premises thereof which he occupies and controls.”<sup>118</sup> These provisions, vaguely worded and defined, have little ability to have an impact other than to generally keep things clean.

One final provision of the Bridgeport Housing Code that may have a great impact on the regulation of asthma triggers is § 15.12.250, which regulates the procedure for the issuance of Certificates of Occupancy, pursuant to statute § 47a-57.<sup>119</sup> Because a Certificate of Occupancy is required before a dwelling can be rented out, this allows the Bridgeport Housing Department an opportunity to inspect residences before problems arise. If implemented with an eye towards asthma triggers, this could help contain asthma and reduce the severity for asthmatics.

An interview with a Bridgeport Housing Inspector revealed that asthma triggers are not a primary concern of the city. An Inspector of the Bridgeport Housing Code Enforcement Office described a typical inspection.<sup>120</sup> The Inspector described most of the dwellings inspected as urban and as apartments. He looks for cracked walls, properly installed electrical facilities, as well as leaky and worn plumbing. In terms of asthma triggers, the Inspector checks the plumbing as well as insuring the minimum standard of ventilation (required by § 15.12.100) is met by making sure the windows are not “painted shut.”<sup>121</sup> Primarily, the department answers to complaints, and if violations are discovered, they issue orders to repair. According to the

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<sup>117</sup> Municipal Code of Bridgeport § 15.12.170(A).

<sup>118</sup> Municipal Code of Bridgeport § 15.12.180.

<sup>119</sup> See Appendix D-I for the language of the statute.

<sup>120</sup> Interview with Bridgeport Housing Code Enforcement Inspector, March 2, 2004.

<sup>121</sup> *Id.*

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Inspector, they “follow through” with these orders, and if the problems are not addressed, then the next step is Housing Court.<sup>122</sup> Based on this interview, the Bridgeport Housing Code Enforcement Office is able to regulate housing and issue Certificates of Occupancy. The problem, however, is that this Inspector has never received any training specifically regarding asthma and what may aggravate the condition of asthmatics. With more training, it is conceivable that inspectors would be able to better recognize and remedy housing violations that increase asthma.

### **Norwich**

The City of Norwich does not enforce a Housing Code per se; instead, they enforce a “Property Maintenance Code.” This Property Maintenance Code is based on BOCA 1996.<sup>123</sup> Until recently, Norwich had instituted a comprehensive preventative program that inspected all multi-family dwellings every three years. Later, this program was changed to an inspection every five years. More recently, the program has been dropped entirely due to staffing and budgetary concerns.<sup>124</sup> The inspection procedure in Norwich is based entirely on the complaints of others in relation to the Property Maintenance Code. See the interview with the Norwich building official, *supra*, for more details.

### **Hartford**

Hartford has adopted its own municipal housing code, found in Chapter 18 of the City of Hartford Municipal Code. There are several provisions of this code that relate specifically and generally to asthma triggers. The Hartford Housing Code § 18-4 authorizes housing inspectors to inspect the dwellings, “in order to perform the duty of enforcing the city and state housing

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<sup>122</sup> *Id.*

<sup>123</sup> Interview with Norwich Housing Department, February 18, 2004. The provisions of BOCA 1996 are thoroughly examined in the Building Code section, *supra*.

<sup>124</sup> *Id.*

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codes.”<sup>125</sup> This general provision gives housing inspectors a mechanism to enforce the applicable provisions of both the Hartford Code and any state regulations that may apply.

Hartford Housing Code § 18-10, Condemnation Procedure, may affect the general health of those with asthma. Specifically, § 18-10(1)(c) gives the director of health or the director of inspections the ability to condemn dwellings that are “unsanitary or otherwise dangerous to the health or safety of the occupants or of the public because of its general condition.”<sup>126</sup> This would indicate that Hartford has the ability to condemn a building or apartment if that dwelling is found to be uninhabitable. This is reminiscent of the “material risk to health” rule used by the Connecticut courts to determine if the implied warranty of habitability has been breached. The same problems would likely arise if this provision is to be used to remedy the situation of asthma sufferers in that the City of Hartford would need to be convinced that “dangerous health conditions” include increased exposure to known asthma triggers.

Several parts of the Housing Code relate specifically to asthma triggers. Section 18-32 requires that “[e]very foundation, floor, wall, ceiling and roof shall be reasonably weathertight, watertight, and rodentproof and shall be capable of affording privacy and shall be kept in good repair.”<sup>127</sup> Section 18-33 requires that “[e]very window, exterior door and basement hatchway shall be reasonably weathertight, watertight and rodentproof and shall be kept in sound working condition and good repair.”<sup>128</sup> Section 18-93 requires that “[e]very habitable room shall have at least one (1) window or skylight which can easily be opened, or such other device as will adequately ventilate the room.”<sup>129</sup> Read together, these three provisions address problems known to be asthma triggers. Weathertight floors, walls, ceilings, roofs, and windows, along

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<sup>125</sup> Municipal Code of Hartford § 18-4.

<sup>126</sup> Municipal Code of Hartford § 18-10(1)(c).

<sup>127</sup> Municipal Code of Hartford § 18-32.

<sup>128</sup> Municipal Code of Hartford § 18-33

<sup>129</sup> Municipal Code of Hartford § 18-93.

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with adequate ventilation, would cut down on mold and moisture problems. Requiring that those same facilities also be rodent-proof would cut down on infestations that can aggravate asthma. Similarly, § 18-140 of the Hartford Housing Code governs pest extermination. In a provision that is nearly identical to § 15.12.220 of the Bridgeport Housing Code, Hartford Municipal Code § 18-140 requires the owner of a dwelling to be liable for removal of the pests only if the “infestation is caused by failure of the owner to maintain a dwelling in a ratproof or reasonably insectproof condition” or if “infestation exists in two (2) or more of the dwelling units in any dwelling, or in the shared or public parts of any dwelling containing two (2) or more dwelling units.”<sup>130</sup> Consequently, the Hartford Housing Code provides a measure of protection from known asthma triggers.

Finally, Hartford Housing Code §§ 18-2 and 18-147 apply to the issuance of Certificates of Occupancy pursuant to statute § 47a-57. Section 18-2 says that “[n]o owner shall occupy or let to any other occupant any vacant dwelling unit unless it is clean, sanitary and fit for human occupancy.”<sup>131</sup> The certification procedure gives the Housing Inspectors a mechanism for investigating the state of public health in Hartford. This mechanism, if implemented with an eye towards preventing asthma triggers, could effect positive change.

An interview with a Hartford Housing Inspector confirmed that the Certificates of Occupancy are an important mechanism for inspections.<sup>132</sup> However, she has not received specific training relating to asthma.<sup>133</sup> The procedure in Hartford usually starts with a complaint from tenants, owners, or agencies. Hartford Housing Inspectors perform limited preventative inspections outside that of the Certificates of Occupancy, but these seem to be based more on

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<sup>130</sup> Municipal Code of Hartford § 18-140.

<sup>131</sup> Municipal Code of Hartford § 18-2.

<sup>132</sup> Interview with Hartford Housing Inspector, February 18, 2004.

<sup>133</sup> *Id.*

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what they can generally see from both the “exterior and interior,” and not specifically related to any asthma triggers.<sup>134</sup> As with Bridgeport, it is conceivable that asthma training would lead to better enforcement procedures.

### **V. Statewide Overview/Analysis**

Our research into Connecticut building codes suggests that while there are aspects of the Code that could be strengthened to encourage ventilation and prevent moisture and mold from growing, by and large the Code is designed to promote healthy homes. Similarly, while the state and municipal housing codes examined in Connecticut do not address asthma directly, there are many relevant parts of these codes that relate to specific asthma triggers. The main problem seems to be that neither the provisions of the municipal codes nor the State Building Code are being enforced as directly or consistently as they need to be in order to control the asthma epidemic. Based on interviews with the building inspectors and municipal housing inspectors, it seems that asthma-related concerns are not a priority. Yet the blame cannot be placed at the feet of the inspectors, because many of them have received no training on asthma and respiratory illnesses. Even those inspectors who are aware of the problem are likely to be working in overworked and underfunded departments. The city of Norwich, for example, used to routinely inspect existing homes every three years but has ended that policy due to budget cuts. Similarly the Hartford Building Department has only half the number of inspectors that they used to. Given this lack of staffing and resources, it is reasonable to infer that those inspections that are taking place are perhaps more cursory than they should be, and that not enough inspections of existing buildings are happening at all.

Despite these problems, Connecticut does appear to be concerned about asthma and is taking steps to combat this growing health threat. The Connecticut Department of Health home

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<sup>134</sup> *Id.*

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page contains easy to follow treatment plans for parents, an asthma awareness section for teachers and health care workers, links to EPA guidelines regarding asthma and mold, as well as an Asthma Task Force, a council appointed by the Public Health Commissioner.<sup>135</sup> The fact that the City of Hartford has responded to the asthma crisis by establishing the Easy Breathing Project and conducting asthma trainings with state social workers and other employees is encouraging. While asthma training for state building and health inspectors would be expensive, the state and various municipalities might be willing to implement such a program. Greater awareness among inspectors could lead in turn to stricter enforcement of asthma-related violations under the warranty of habitability and local legislation. If the municipalities and the state government of Connecticut can come to recognize asthma as the serious health threat that it is, they will be more willing to make the necessary changes to promote healthy and livable homes.

### **III. MAINE**

#### **Introduction**

The State of Maine has a population of 1.3 million with 52 percent of the population being female and 48 percent being male.<sup>136</sup> Generally, Maine is a state of families. In 2002, families made up 67 percent of the households in Maine.<sup>137</sup> Eleven percent of Maine's population was considered to be below the poverty line, and the majority of those in poverty were family households with only a female householder present.<sup>138</sup>

The racial makeup of Maine is overwhelmingly white. In 2002, the white population in Maine was 1,233,888 people while the second most numerous race, American Indian, was

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<sup>135</sup> State of Connecticut, Department of Public Health homepage. <http://www.dph.state.ct.us>.

<sup>136</sup> American Community Survey. 2002. U.S. Census Bureau. [www.census.gov](http://www.census.gov).

<sup>137</sup> Ibid

<sup>138</sup> Ibid

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estimated at 13,009 people.<sup>139</sup> The African American population in Maine is estimated at only 9,086 people of the total population and the Hispanic population is 8,870 people.<sup>140</sup>

Most housing in Maine is made up of single-family units with a large ownership base. In 2002, Maine had 536,000 occupied housing units and 72 percent of these were owner occupied. Of the total housing units, 70 percent were single-unit structures, 20 percent were multi-unit structures, and 10 percent were mobile homes. Only 15 percent of Maine's housing units have been built since 1990, meaning that the housing stock tends to be older.<sup>141</sup>

### Municipal Demographics

This project focuses on three specific regions of Maine: the Cities of Lewiston, Portland, and Saco. The demographics of these cities are as follows:

Lewiston has a total population of 35,690 people with 52 percent of that population being female. Lewiston, like Maine itself, is predominantly white (95 percent), and African Americans and Hispanics only account for one percent of the total population.<sup>142</sup> The percentage of renters in Lewiston is higher than the state average; however, most people still occupy single-family homes rather than duplexes, apartments, or other multi-family housing.<sup>143</sup> In 2003, new construction in Lewiston was clearly focused on single-family housing with 85 new single-family homes built at an estimated cost of \$12,590,000 while only two multi-unit dwellings were constructed at a cost of \$630,000.<sup>144</sup>

Portland is the largest city in Maine, with a population of 64,249.<sup>145</sup> The city attracts a larger percentage of young adults than the rest of the state; thus, Portland has a larger percentage

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<sup>139</sup> ACS Tabular Profile for Maine. 2002. [www.products/profiles/single/2002...](http://www.products/profiles/single/2002...)

<sup>140</sup> *Ibid*

<sup>141</sup> American Community Survey. 2002.

<sup>142</sup> Lewiston, Maine. 2000. [www.city-data.com](http://www.city-data.com)

<sup>143</sup> *Id.*

<sup>144</sup> Maine Department of Labor. 2003.

<sup>145</sup> *Id.*

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of rental units than the rest of Maine, with 58 percent of people renting.<sup>146</sup> The income disadvantage of many Portland residents relative to the rest of the state also helps explain the high proportion of renters living in the city. Portland's poverty rate, at 14 percent, is higher than the state average, and the largest group affected by poverty is children under the age of five. Citywide, an average of ten percent of Portland's residents receive some sort of public assistance with the two regions of West Bayside and East Bayside receiving three times the city average.<sup>147</sup>

Substandard housing conditions, defined as housing that has a significant amount of deterioration, are estimated at about four percent of Portland's total housing.<sup>148</sup> Of this total, the majority of substandard housing is found in multi-family housing in the West and East sides of the city. In 1999, there were 302 households in Portland's Public Housing system.<sup>149</sup> The demand for public housing and section eight housing clearly exceeds the supply, and in 1999, 785 people were on the waiting list for public housing.<sup>150</sup> Of those who do live in public housing, over 40 percent are families from another country.<sup>151</sup>

Fifty-two percent of the total households in Maine are still considered to be family households. Of these households, the majority is still single-family units (58 percent), but Portland has a greater amount of people living in multi-family housing than any other city or town in Maine.<sup>152</sup> Slightly more than half of Portland's housing stock is at least fifty years old, and only three percent of the housing stock has been built since 1989.

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<sup>146</sup> Population Division, US Census Bureau. 1999.

<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*

<sup>152</sup> *Id.*

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The city of Saco, Maine has the smallest population of the cities looked at, with a population of 16,822.<sup>153</sup> Racial diversity in Saco is almost non-existent, with no African-American population and a Hispanic population of only 0.6 percent.<sup>154</sup> In 1993 the city of Saco had 28 single family homes built at a cost of \$3,530,000, and two multi-family dwellings were built at a cost of \$260,000.<sup>155</sup>

### **The State Structure**

The Maine Constitution provides that “[t]he inhabitants of any municipality shall have the power to alter and amend their charters on all matters, not prohibited by Constitution or general law, which are local and municipal in character”.<sup>156</sup> The Maine legislature has codified this provision of the Constitution, thereby granting the power of home rule to municipalities. This power means that “[a]ny ordinance adopted or repealed by a municipality under its home rule authority may incorporate by reference any code or portions of any code, or any amendment of such a code...”, with a code meaning “any published compilation of regulations or enforceable standards which has been prepared by any association or organization that is nationally recognized for establishing standards...”<sup>157</sup> Portland, Lewiston, and Saco have all adopted building codes and sanitary/housing maintenance provisions within their respective codes of ordinances pursuant to their home rule powers although the sources of these provisions are different for each city.

### **Building Codes**

The state of Maine does not have a State Building Code. All cities/towns within Maine are free to make or adopt any building code they wish or, if they so choose, to adopt no code at

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<sup>153</sup> Saco, Maine. [www.city-data.com](http://www.city-data.com).

<sup>154</sup> *Id.*

<sup>155</sup> Maine Department of Labor, 2003.

<sup>156</sup> Maine Constitution, Article VIII § 1

<sup>157</sup> 30- Maine Rev. Stan. Ann § 3003

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all. To date, 70 out of 400 cities/towns in Maine have adopted a building code.<sup>158</sup> The towns of Lewiston, Portland, and Saco have each adopted building codes. Lewiston and Portland have adopted editions of the BOCA code 1990<sup>159</sup> and 1999<sup>160</sup> respectively. The city of Saco currently uses the One and Two Residential Dwelling Code<sup>161</sup> but is currently in the process of adopting BOCA, which it already uses for all commercial buildings, as its code.<sup>162</sup> For the purposes of this assignment, the BOCA code referenced is the 1990 code. An analysis of more recent versions of this code can be found in the Connecticut analysis (Section II, Building Code).

Although Maine does not have a State Building Code, it has instituted a state statute regulating the inspection of buildings. This statute provides some very basic structural safeguards that must be met, leaving the individual towns with the ability to enact more stringent building codes if they so choose. Chapter 313 of the Maine Statutory Code maintains that every town and city in Maine with over 2,000 inhabitants shall appoint a building inspector. Cities and towns must appoint an inspector regardless of whether they have adopted a building code or not. The building Inspector is to inspect each new building during the process of construction to see that all proper safeguards against the catching or spreading of fire are used, that chimneys and flues are made safe and that proper cutoffs are placed between the timbers in the walls and floorings where fire is most likely to spread. The inspector is also in charge of examining all existing buildings that are under construction for repairs or renovations.

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<sup>158</sup> Interview with Portland, Maine Building Inspector. March, 2004.

<sup>159</sup> Lewiston Code of Ordinances. § 18-26

<sup>160</sup> Portland Code of Ordinances. § 6-16

<sup>161</sup> Saco Code of Ordinances. § 73-2

<sup>162</sup> Interview with Dick Lambert, Saco Building Inspector. March 9, 2004.

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## Building Codes Compared to ARC/EPA Guidelines

The BOCA codes adopted by Portland and Lewiston and soon to be adopted by Saco do offer protections against would-be asthma triggers; namely, regulations to ensure that homes are kept weather-tight, adequately ventilated, and pest-free.

BOCA has requirements to ensure that homes are kept moisture resistant. In keeping exterior walls weather-tight, BOCA says, “[t]he exterior walls shall be faced with an approved weather resistant covering properly attached to resist wind and rain.”<sup>163</sup> BOCA includes more specific regulations by requiring the minimum thickness of weather coverings of a variety of different materials: aluminum, asbestos, brick, clay, plywood, marble, steel, wood.<sup>164</sup> Along with this guideline, the Code insists that the nails used on wall coverings shall be approved corrosion resistant nails.<sup>165</sup> In order to further protect exterior walls from moisture, BOCA requires that “all wall pockets or crevices in which moisture can accumulate shall be avoided or protected with caps or drips...”<sup>166</sup> and “Corrosion-resistant flashing shall be provided at the top and sides of all exterior window and door openings in such a manner to be leak-proof. Similar flashings shall be installed at the intersection of chimneys, built in gutters, and roof intersections.”<sup>167</sup>

In comparison to the ARC/EPA guidelines, the BOCA codes provide even greater specificity in regards to keeping exterior walls free from outside dampness. Despite these stringent guidelines, however, the BOCA code shows less concern about the accumulation of mold as a result of equipment inside the home. As a result, BOCA lacks many of the guidelines set forth by ARC/EPA, such as the requirements that there should be no plumbing in exterior

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<sup>163</sup> 18 Lewiston Code of Ordinances § 2101.3

<sup>164</sup> 18 Lewiston Code of Ordinances 103.3.2

<sup>165</sup> 18 Lewiston Code of Ordinances §2103.3.7

<sup>166</sup> 18 Lewiston Code of Ordinances §2103.3.9

<sup>167</sup> .18 Lewiston Code of Ordinances §2103.3.10

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walls, that hot water heaters should be installed in rooms with drains or catch pans, or that washers, furnaces, and water heaters be vented to the outside.

One area in which the BOCA 1990 code is significantly lacking is in regards to bathrooms, a deficiency which is particularly relevant considering the moist nature of bathroom spaces. The ARC/EPA guidelines have extensive provisions covering bathrooms. They require that no material that ‘wicks moisture’ be used in wet areas ‘like showers and tubs’ and there is to be no wall-to-wall carpet in bathrooms, kitchens, and utility rooms. Despite these many guidelines, BOCA 1990 simply makes no mention of these provisions.<sup>168</sup>

BOCA 1990 does pay particular attention to providing that basements are kept water-resistant, and it states, “Walls or portions thereof that retain earth and enclose interior spaces and floors below grade shall be waterproofed and dampproofed.”<sup>169</sup> BOCA 1990, in fact, goes into great detail about materials to be used, the amount of material to be used and exactly what needs to be moisture resistant in basements. BOCA specifies:

When installed beneath the slab, Damp-proofing shall consist of not less than 6-mill polyethylene with joints lapped not less than six inches. When installed on top of the slab, damp-proofing shall consist of mopped-on bitumen.<sup>170</sup> BOCA also requires that all holes in basement walls be sealed with cement mortar and waterproofed with “three pounds of per square yard of acrylic modified cement.”<sup>171</sup>

Additional provisions require that walls in the basement shall be dampproofed by “installing dampproofing materials on the exterior surfaces for wall and shall extend from the top of the footing to above ground level.”<sup>172</sup> Finally, BOCA also directs that a drainage system be installed around the foundation perimeter made of “gravel or crushed stone”<sup>173</sup> and that “the ground

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<sup>168</sup> It should be noted that this shortcoming has been addressed in subsequent versions of the BOCA code. See BOCA 1996.

<sup>169</sup> 18 Lewiston Code of Ordinances §1224.1

<sup>170</sup> 18 Lewiston Code of Ordinances §1224.3.1.1

<sup>171</sup> 18 Lewiston Code of Ordinances 1224.3.2.2

<sup>172</sup> 18 Lewiston Code of Ordinances § 1224.3.2

<sup>173</sup> 18 Lewiston Code of Ordinances § 1224.5.2

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immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than one unit vertical for a minimum distance of eight feet.”<sup>174</sup> All of these are detailed guidelines, more stringent even than those suggested by ARC/EPA. One real shortcoming of BOCA 1990 is that it does not contain specifications on how and where insulation should be placed in walls, while ARC and EPA have detailed provisions regarding insulation.

The BOCA code only pays marginal attention to ventilation, but it does provide that “[e]very room or space intended for human occupancy shall be provided with natural or mechanical ventilation.”<sup>175</sup> One specific requirement in regards to natural ventilation is that, “the minimum openable area to the outdoors shall be 4 percent of the floor area being ventilated.”<sup>176</sup> BOCA also insists that all roof spaces and crawl spaces be ventilated by “cross ventilation for each separate space by ventilation openings that are protected against the entrance of rain and snow” by a covering of “corrosion-resistant mesh.”<sup>177</sup> Many of the suggested ventilation guidelines set forth by ARC/EPA, such as exhaust fans in bathrooms and kitchens, have to do with mechanical ventilation, which is covered in the mechanical codes adopted by each municipality.

Lastly, the BOCA code does require ratproofing of all spaces in homes that people will occupy. The Code says that a building must either be provided with a continuous foundation or have an apron that is “constructed of water-resistant and ratproofing material.”<sup>178</sup> The Code also specifies that “all openings in the wall or apron be guarded with corrosion resistant ratproof

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<sup>174</sup> 18 Lewiston Code of Ordinances §1224.7

<sup>175</sup> 18 Lewiston Code of Ordinances § 703.2

<sup>176</sup> 18 Lewiston Code of Ordinances §706.2

<sup>177</sup> 18 Lewiston Code of Ordinances § 709.0

<sup>178</sup> 18 Lewiston Code of Ordinances § 2101.7

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shields of steel sheets, or aluminum, or mesh screens.”<sup>179</sup> These provisions are strikingly similar to the ARC/EPA requirements.

### Field Research and Enforcement

Although the BOCA code does provide protections against would-be asthma triggers such as weather-tightness, ventilation, and ratproofing, a closer look at actual inspections gives insight into what inspectors are actually concerned with when conducting an inspection.

First and foremost, Building Inspectors in Maine primarily see their jobs as dealing only with new buildings. Mike Nugunc, a building inspector for Portland, explained that building inspectors rarely run into problems such as mold, pests, and improper ventilation because they are dealing strictly with new buildings, and their job is to make sure these buildings adhere to the code so that these problems never arise.<sup>180</sup> Old buildings, on the other hand, often have problems with mold and pests.<sup>181</sup> These problems tend to be especially prevalent in the older homes in poorer areas of Portland.<sup>182</sup> Mr. Nugunc said that these problems were not the responsibility of the building inspector but rather were forwarded to the Housing Department.<sup>183</sup>

In the City of Lewiston, the Building Inspector, Gary Campbell, said that on occasion a building inspector will address a complaint on an old building. In these cases, a building inspector will act retroactively in condemning homes that have clear-cut infestations of mold/mildew or like problems.<sup>184</sup> Mr. Campbell explained, however, that these cases, generally found in low-income housing, had to be glaringly obvious and a danger to health. In gray areas, the Office of Code Enforcement would refer the home to the Office of Environmental Protection,

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<sup>179</sup> 18 Lewiston Code of Ordinances § 2101.7.2

<sup>180</sup> Interview with Mike Nugunc. Portland Building Inspector. March 4, 2004.

<sup>181</sup> *Id.*

<sup>182</sup> *Id.*

<sup>183</sup> *Id.*

<sup>184</sup> Interview with Gary Campbell. Lewiston Building Inspector. March 4, 2004.

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which has experts to confirm if mold has reached a certain level of toxicity or not.<sup>185</sup> In general, Mr. Campbell agreed with Mr. Nugunc that this was the responsibility of the Housing Department.

Not only do building inspectors feel that their primary duty is to the construction of new buildings, they also do not feel that the existence of mold, moisture, and ventilation problems in a home are their real responsibilities. Mr. Campbell explained that upon doing an inspection, an inspector focuses mainly on three separate areas: structural integrity, foundation, and fire safety.<sup>186</sup> Mr. Campbell did say that application of the code in different neighborhoods was extremely even-handed and that even greater attention was put on tenement and multi-family housing where structural and fire safety presented a greater threat to life.<sup>187</sup> Despite even application of the Code, Mr. Campbell did admit that certain aspects of the code, such as ventilation and weather-tightness, take a back seat to concerns with the structural integrity and fire resistance of the home.<sup>188</sup>

Nonetheless, if a home is not in compliance with a part of the Code that pertains to ventilation or weather-tightness, inspectors do feel that it is their responsibility to issue a warning and make sure these problems are fixed before anyone inhabits the house. Mr. Nugunc also said that the building inspector's primary responsibility was towards the structural integrity of the home, but "if it's a part of the Code it is our job to enforce it and that includes the regulations on weather-tightness."<sup>189</sup> Mr. Nugunc, however, also said that most ventilation was regulated in new buildings under the 1993 mechanical code rather than the building code.<sup>190</sup>

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<sup>185</sup> *Id.*

<sup>186</sup> *Id.*

<sup>187</sup> *Id.*

<sup>188</sup> *Id.*

<sup>189</sup> Interview with Mike Nugunc.

<sup>190</sup> *Id.*

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Dick Lambert, the inspector for the city of Saco, felt that pest and mold problems were not something addressed by the building code and were most likely an issue for the Housing Department to address.<sup>191</sup> Mr. Lambert also said that mold was simply not something that residents of homes complained of and building inspectors never had to address the issue.<sup>192</sup>

Thus, all three building inspectors interviewed seemed to agree that, while the Building Code may include provisions concerning proper ventilation, weather-tightness, moisture, and pests, these are not issues that they generally prioritize in their inspections. This may be because the inspectors largely inspect new buildings. As Mr. Campbell estimated, 95 percent of inspections occur upon the filing of a construction permit.<sup>193</sup> Building inspectors typically do not have the manpower nor the money to do more proactive inspections, as Mr. Campbell pointed out.<sup>194</sup> Another factor which may contribute to the building inspectors' ignorance of mold, moisture, ventilation, and pest issues is that these are issues generally associated with existing housing, and dealt with by the Health Department. Other than in the most extreme cases in which they condemn buildings due to problems with mold or the like, building inspectors simply don't see health threats in existing buildings as part of their job description.

### **Sanitary Codes**

In a critical comparison of municipal sanitary codes to the ARC Healthy Homes Guidelines, it is important to remember that sanitary code provisions are required to maintain already existing structures, and to “[protect]... the public health, safety and welfare in all existing buildings and premises”<sup>195</sup>. Thus, regulations contained in sanitary codes tend to be much more general than in building codes. The following comparisons of municipal sanitary

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<sup>191</sup> Interview with Dick Lambert, Saco Building Inspector. March 9, 2004.

<sup>192</sup> *Id.*

<sup>193</sup> Interview with Gary Campbell.

<sup>194</sup> *Id.*

<sup>195</sup> BOCA National Property Maintenance Code/1993, Preface.

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codes with ARC Healthy Homes Guidelines and the EPA Indoor Air Quality Specifications have been done by comparing not the exact language of the provisions, but rather the goals that the provisions are attempting to accomplish.

### Sanitary Code and Enforcement in Portland, ME

Portland has a vast code of ordinances, of which two chapters directly deal with the topics of this investigation. Chapter 6 of the code is entitled “Buildings and Building Regulations”, and contains, in relevant part, Article V – the Housing Code, which acts as the sanitary code for the municipality of Portland<sup>196</sup>. The code of ordinances also contains a separate chapter (22) dealing solely with rodent and vermin control<sup>197</sup>; however, Chapter 22 mostly addresses the proper disposal of garbage and the feeding of animals, and does not address the structural integrity of buildings themselves. Therefore, it will be addressed less than the main housing code. Both the Housing Code and Chapter 22 originated in the Portland Code of Ordinances, which was passed in 1968.

Section 108 of the Housing Code sets up the *minimum* standards for structural elements of a dwelling. It calls for all foundation, basements, cellars, exterior walls and roofs to be “substantially weathertight, watertight, and vermin proof”.<sup>198</sup> The same requirement is made for every window or door<sup>199</sup>, and for every floor, wall ceiling and door<sup>200</sup>. In effect, these requirements address most of the goals that are enumerated in the Dry and Clean Structures section of the ARC Healthy Homes Guidelines; however, this is done very generally, without suggesting specific materials or building techniques, and thus leaves a lot of room for error.

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<sup>196</sup> City of Portland Code of Ordinances, Chapter 6.

<sup>197</sup> *Id.* at Chapter 22.

<sup>198</sup> *Id.* at Chapter 6 Art. V § 6-108 (a)

<sup>199</sup> *Id.* at § 6-108(c)

<sup>200</sup> *Id.* at § 6-108(b)

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Portland's requirement for ventilation does not correspond closely with either the ARC or the EPA guidelines. Portland requires an openable window in every habitable room, except where an approved method of mechanical ventilation may be substituted<sup>201</sup>. It does not require ventilation in bathrooms or kitchens, which are inherently the wettest areas of a dwelling.

Perhaps the greatest deficiency in the Portland Housing Code is in the assumption that excessive moisture or dampness comes only from having structural elements that are not watertight or weathertight. Although the code requires every structural element to be weather- and water-tight, it does not address building defects in conditions which could create excessive moisture within the home. For example, there is no requirement for the insulation of cold water pipes. Similarly, it does not have provisions against placing carpeting in wet areas, such as basements, kitchens, and bathrooms.

Also, the ARC and EPA guidelines, which both provide requirements for the insulation and dry conditions for all basements, are more stringent than the Portland Housing Code, which only provides basic guidelines, and only for those basements which will be used for habitation. Portland only requires that those basements be dry and that there be sufficient ventilation.

The Housing Code has some strengths as well. Due to Maine's cold weather, there are heat-related provisions that are more strict than ARC and EPA guidelines. The minimum heating standards prohibit occupation, either as owner or as lessee, of dwellings which do not comply with the standards<sup>202</sup>, provide for a temperature of at least sixty-eight degrees Fahrenheit for all habitable rooms (excluding those used primarily for sleeping)<sup>203</sup>, and for proper ventilation of all stoves, furnaces, room heaters or water heaters.<sup>204</sup> These regulations enhance the comfort level

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<sup>201</sup> *Id.* at § 6-112

<sup>202</sup> *Id.* at § 6-114

<sup>203</sup> *Id.* at § 6-114(b)

<sup>204</sup> *Id.* at § 6-114(c)

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of a dwelling, permitting reasonable and constant conditions within, without requiring the tenant to undertake potentially dangerous and discomforting alternatives, such as a space heater or an open stove. Proper drainage is something else that the Housing Code addresses specifically, stating in relevant part that “[w]ater from roofs shall be so drained and conveyed therefrom as not to cause repeatedly wet floors, walls, or ceilings”.<sup>205</sup>

The Portland Housing Code also includes stringent regulation against pests, providing that every dwelling “shall be kept and maintained free from insects, rodents, or other pests.”<sup>206</sup> It provides a division of responsibility, which allocates the duty to eradicate pests to the landlord if two or more dwelling units suffer the infestation or if it is the landlord’s failure to keep the dwelling in a substantially pest-free condition that caused the infestation.<sup>207</sup> The duty to eradicate pests falls to the tenant if his is the only unit that suffers from infestation, unless it was the landlord’s failure to keep the dwelling in a substantially pest-free condition that caused the infestation.<sup>208</sup> Chapter 22 provisions dictate the proper disposal of garbage and prohibit the accumulation of any garbage, except in a proper container.<sup>209</sup> Even more importantly, Chapter 22 addresses the issue of older dwellings, and provides that every building which existed in 1956 should be rodent-proofed.

### Enforcement

Although excessive moisture, pest infestations, and poor ventilation are all asthma triggers, the housing inspectors who enforce these regulations seem to know very little about asthma.

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<sup>205</sup> *Id.* at § 6-108(a)

<sup>206</sup> *Id.* at § 6-109(e)

<sup>207</sup> *Id.* at § 6-109(e)(2), § 6-109(e)(3)

<sup>208</sup> *Id.* at § 6-109(e)(1)

<sup>209</sup> *Id.* at Chapter 22 § 3(a)

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In Portland, there are about three to four thousand apartment dwellings, ranging in size from two to three units per building to large apartment buildings.<sup>210</sup> Over the past few years, there were typically about six or seven code enforcers in Portland to conduct all inspections, including food establishment inspections.<sup>211</sup>

Portland code enforcers conduct mandatory pre-habitation inspections of lower-income general assistance housing, including federally funded housing. The main things that code enforcers look for during these inspections are “life safety issues” such as fire safety, proper plumbing, and proper electrical wiring. Heating is an especially important issue. However, according to the Portland Code Enforcer, while certain elements of the housing codes take priority, all sections of the codes are enforced equally, and if a certain condition such as excessive moisture is found to exist, it will be strictly cited as a violation.<sup>212</sup>

The other way an inspection can be initiated is in response to a complaint. Typically, if a violation is found, a notice of violation is issued, and the owner of a building has a certain amount of time to address the violation. A follow-up inspection is required to ensure that the problem has been eradicated. In some situations, the problem that exists in the “complaining” apartment will seem prevalent through the entire building. In these cases, the code enforcers will need the cooperation of other tenants to allow them into the apartments.<sup>213</sup>

Neither of the Portland code enforcers interviewed has received training about asthma or respiratory illness. All inspection programs are tailored to the funding and staffing that is available. In the past few years, the department had to cut down its proactive (non-complaint

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<sup>210</sup> Interview Portland code enforcer 3/1/04.

<sup>211</sup> *Id.*

<sup>212</sup> Interview Portland code enforcer 3/5/04.

<sup>213</sup> *Id.*

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initiated) inspections due to cuts in the staff,<sup>214</sup> which does not bode well for the potential of trainings in the future.

### **Sanitary Code and Enforcement in Lewiston and Saco, ME Sanitary Codes**

As enabled by the state code, Saco has adopted the BOCA National Property Maintenance Code of 1993 (4<sup>th</sup> Ed) by reference within its code of ordinances<sup>215</sup>. The Code underwent several amendments in the process of incorporation. Lewiston has adopted the BOCA National Property Maintenance Code of 1990 by reference, and with amendments, as its sanitary code<sup>216, 217</sup>. In the interest of avoiding redundancy, the sanitary codes of Saco and Lewiston will be critically compared to ARC Healthy Homes guidelines and EPA Indoor Air Quality Specifications together, and will be referred to as the “Maintenance Code”.

Like the Portland Housing Code, the Maintenance Code addresses most of the goals that the ARC and EPA guidelines attempt to accomplish. Though it does not specifically provide for building materials or techniques, it addresses weather- and water- tightness in windows and doors, provides for indoor surfaces that are maintained in good repair, and requires that foundation walls be maintained “plumb and free from open cracks and breaks.”<sup>218</sup> Like the Portland Housing Code, the Maintenance Code addresses grading, and requires that all premises themselves be graded so as to prevent the accumulation of stagnant water<sup>219</sup> as well as that roof drainage be sufficient to prevent dampness in the interior structure.<sup>220</sup>

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<sup>214</sup> *Id.*

<sup>215</sup> Saco Code of Ordinances § 163-2

<sup>216</sup> Lewiston Code of Ordinances Article III §18-51.

<sup>217</sup> The Maine sanitary subcommittee was unable to obtain a copy of the 1990 edition of the BOCA National Property Maintenance Code. All analysis will be conducted based on the 1993 edition.

<sup>218</sup> *Id.* at PM-304.11, PM-305.3, PM-304.4

<sup>219</sup> *Id.* at PM-303.2

<sup>220</sup> *Id.* at PM-304.6

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The Maintenance Code's strength lies in its stringent requirements for ventilation. In this particular area, the Maintenance code has quite explicit specifications, much more so than either the ARC or the EPA guidelines. It requires that all habitable spaces have at least one window,<sup>221</sup> that all bathrooms and toilet rooms have a window as well, unless they have mechanical ventilation systems that comply with a set of very detailed requirements, including how much exhaust air can be recirculated, and where it can be recirculated to.<sup>222</sup> Ventilation is also required in spaces like kitchens,<sup>223</sup> and ventilation systems are not allowed to release any exhaust on adjacent property, or that of another tenant.<sup>224</sup>

The Maintenance Code is also quite specific in its provisions against rodents, providing in part that screens be required for every door or window used for ventilation purposes from May 1<sup>st</sup> to October 1<sup>st</sup>, and that every swinging door have a self-closing device.<sup>225</sup> The owner of any structure is responsible for extermination of pests prior to renting the structure,<sup>226</sup> or if multiple occupants occupy the structure, the occupants of a structure are responsible for extermination on the premises if the infestation is caused by a failure of one occupant to prevent the infestation.<sup>227</sup>

Similar to the Portland Housing Code, the Maintenance Code seems to assume that excessive moisture or dampness comes from having structural elements that are not watertight or weathertight. Again, there is no requirement for the insulation of cold water pipes. Similarly, there are no provisions against placing carpet in wet rooms such as kitchens and bathrooms, and there are no suggestions to reduce the carpeting in rooms used for habitation as well.

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<sup>221</sup> *Id.* at PM-404.1

<sup>222</sup> *Id.* at PM-404.2, PM-404.2.1, PM-202.2.2

<sup>223</sup> *Id.* at PM-404.4

<sup>224</sup> *Id.* at PM-303.6

<sup>225</sup> *Id.* at PM-304.12

<sup>226</sup> *Id.* at PM-307.2

<sup>227</sup> *Id.* at PM-307.4

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## Enforcement

In Saco, inspectors do not conduct pro-active inspections of apartments or other dwellings; inspections are conducted solely in response to complaints. If a violation of the code is indeed found, a violation is always issued, and a “reasonable” amount of time is given to fix the problem, with the definition of “reasonable” varying, depending on the problem itself.<sup>228</sup> Most of the times, a follow-up inspection is required. However, one of the code enforcers stated that even if there is no follow-up inspection, the inspectors find out sooner or later whether the problem was fixed: “believe me, if the problem is not fixed, [the tenants] let us know about it.”<sup>229</sup>

Though there is some federally funded housing in Saco, most of the residents there do not complain to the Saco code enforcers, preferring instead to go straight to the controlling federal agency. Typically, the municipal code enforcers do not deal with federally funded housing, though there have been a few times in the past when they had responded to a complaint by a tenant.<sup>230</sup>

Similar to Portland’s code enforcers, Saco’s code enforcers do not receive any kind of education that addresses respiratory problems or asthma. One code enforcer stated: “the last time I had any kind of health training was back in the 1980’s, when I was working in Portland. That was about asbestos and lead testing, though.”<sup>231</sup> According to the same enforcer, mold and respiratory issues are not something that tenants complain about in Saco. In the past eight years, there has been only one complaint about mold and this was from a man who was concerned about the indoor air quality on his job, not in his home. However, even if there were more complaints about mold, the code enforcers would not be able to address the issue due to the fact

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<sup>228</sup> Interview. Saco Code Enforcer. 3/8/04

<sup>229</sup> *Id.*

<sup>230</sup> *Id.*

<sup>231</sup> *Id.*

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that mold is not mentioned in the Maintenance Code.<sup>232</sup> When the code enforcer was asked whether he was aware that mold was a potential asthma trigger, and informed that Maine had the highest asthma rate in the country, he responded “It will only get worse... they have already cut down all the inspection programs in the state, and they are holding a referendum this summer on future property tax cuts, meaning they will have to cut more programs.”<sup>233</sup> If this inspector’s predictions are correct and there are more budget cuts, it seems unlikely that code enforcers will be able to improve the quality of their inspections in Saco.

A building inspection in Lewiston is triggered only upon complaint. Lewiston code enforcers do not undertake proactive inspections of any dwellings. They do try to respond quickly to every complaint, from pest infestations to leaky pipes.<sup>234</sup> The inspectors try to enforce every section of the building code equally. When the Lewiston Code Enforcer was asked whether he has to deal with mold during his inspections, he seemed unsure of an answer, and replied “mold is somewhat of a gray area, you see. It is not in the code, so we cannot enforce it. On the other hand, we know it is there.” When he was asked if any measures were being taken specifically with asthma prevention in mind, he replied “Well, no. If mold is a gray area, then asthma is just a black area.”<sup>235</sup> Lewiston code enforcers do not receive any training regarding respiratory disease, asthma, or mold.

### Case Law

Instead of filing a complaint with a building inspector, another possible avenue for a Maine tenant to take is to file a complaint against a landlord in court. In Maine, the implied warranty of habitability is codified within the state code, and provides several possible remedies

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<sup>232</sup> *Id.*

<sup>233</sup> *Id.*

<sup>234</sup> Interview. Lewiston Code Enforcer. 2/19/04

<sup>235</sup> *Id.*

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for the complaining party including mandatory repairs or refund of rent paid if their premises are indeed found to violate the warranty.<sup>236</sup> However, in *Chiu v. Nancy K Davis – East* the Supreme Judicial Court of Maine refused to grant plaintiff’s liability damages suffered by the plaintiff’s son as a result of a defective window.<sup>237</sup> The court stated that “the statutory language clearly precludes an award of consequential damages for a breach of the warranty of habitability.”<sup>238</sup> From this case, we can see that even if tenants will be successful at litigating asthma-triggering factors as a violation of the implied warranty of habitability, it will be unlikely that they will be able to obtain damages for the health problems they suffered as a result.

An implied warranty of habitability is also enforced by the courts in the sale of homes, albeit in a limited manner. The Supreme Judicial Court of Maine allowed a plaintiff a jury trial in a situation where she bought a new modular home from a builder-vendor, which had a substantial defect: the basement flooded continuously, and the resulting mold caused allergies in the plaintiff. The Court held that this constituted a breach of the implied warranty of habitability, and that a jury could award commensurate damages.<sup>239</sup> However, in a case where the plaintiff had bought an older home,<sup>240</sup> the Supreme Judicial Court held that “we decline to impose upon the seller of every existing home the burden of an implied warranty of habitability.”<sup>241</sup> The Court proceeded to distinguish the cases where the plaintiffs were granted damages, stating that “the owner of an older home stands in a much different relation to the property than does the builder-vendor of a new residence... to hold a homeowner who had no part in the construction of

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<sup>236</sup> 14 M.R.S. § 6021 (4)

<sup>237</sup> *Chiu v. Nancy K Davis – East*. 2001 Me. Super. Lexis 146

<sup>238</sup> *Id.*

<sup>239</sup> *Strickland v. Cousens Realty Inc.* 484 A.2d 1006 (Me, 1984)

<sup>240</sup> *Stevens v. Bouchard* 532 A.2d 1028 (Me, 1987)

<sup>241</sup> *Id.* at 1030

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the residence to the same level of accountability offends considerations of fairness and common sense.”<sup>242</sup>

In sum, although it is possible to bring a suit against a landlord claiming a violation of the implied warranty of habitability, it is unlikely that the plaintiff will obtain more lucrative benefits than those achieved by filing a complaint to a building inspection office, considering that not many people can assume the risks of attorney fees and other costs. However, in cases where the disgruntled resident is the owner of the property, the only possible avenue he/she may take is to file a suit against the seller – if the property was built by the seller. This may work in the case of newer and modular homes, but not for those residents who had bought an older house. Considering Maine’s high property ownership rate and the high risks and costs of bringing a case to court, the options available to Maine homeowners become ever narrower.

### Maine Statewide Analysis

Maine has the highest adult and child asthma rates in the nation.<sup>243</sup> These asthma rates have increased in the last twenty years by an astonishing 75 percent.<sup>244</sup> This information has received extensive media coverage, and prompted varying explanations from different sources. Some blame Maine’s geographic location and local weather patterns for increased air pollution from the Midwest.<sup>245</sup> Others blame older houses which do not conform to modern stringent guidelines, prevalent through New England. Still others blame new housing which does not have sufficient ventilation, or mobile homes with their wall-to-wall carpeting and forced-air heat.<sup>246</sup> Although the sources of the high asthma rates are unclear, the cost is not. Of the 128,000 people living with asthma in Maine, 28,000 are children, and as a result, asthma is responsible for

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<sup>242</sup> *Id.*

<sup>243</sup> [www.bangornews.com/editorialnews/articles/073103statesasthmarate\\_mhaskell.cfm](http://www.bangornews.com/editorialnews/articles/073103statesasthmarate_mhaskell.cfm)

<sup>244</sup> “Asthma in Maine.” American Lung Association. [www.mainelung.org](http://www.mainelung.org).

<sup>245</sup> *Id.*

<sup>246</sup> *Id.*

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50,000 lost school days and 1300 hospitalizations.<sup>247</sup> Adult asthma means a decrease in productivity because adults are missing work. Thus, asthma in Maine is not only a dangerous problem but an expensive problem.<sup>248</sup>

One common theme which emerged from interviews with building and housing inspectors is that despite the astoundingly high rates of asthma in Maine, inspectors do not see the prevention of asthma triggers as an aspect of their jobs. This may be due to weaknesses in the codes they enforce, a shortage of manpower, or a lack of education about asthma and respiratory illnesses. None of the inspectors interviewed had ever received asthma training; thus, they simply may not be aware of the magnitude of the problems or what they can do to stop asthma.

Another problem is that lower-income people, and particularly children, suffer disproportionately from asthma in Maine, yet these are the populations that rely most heavily on inspectors and the state infrastructure. Gildace Arsenault, head of the inspection department of Lewiston, offered that this is most likely *not* the result of lower income homes being constructed poorly or even having to deal with more maintenance problems.<sup>249</sup> Rather, Mr. Arsenault said that these problems occur across socio-economic classes, but those with more money simply have greater reserves to combat the problem without having to appeal to an inspector.<sup>250</sup> This lack of financial resources may impact both the construction of new homes and the enforcement of sanitation standards in existing homes.

This problem of people simply not possessing the resources to address asthma triggers is exacerbated in Maine because it has a very high rate of home ownership. Many people who own

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<sup>247</sup> *Id.*

<sup>248</sup> “Asthma in Maine”. American Lung Association. [www.mainelung.org](http://www.mainelung.org)

<sup>249</sup> Interview with Gildace Arsenault

<sup>250</sup> *Id.*

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their homes may have problems with moisture or inadequate ventilation of course, but they may not feel they have the money to fix the problem and are less likely to ever have their homes inspected. Moreover, many lower-income homeowners in Maine may choose to purchase modular and mobile homes, which tend to have wall-to-wall carpets, forced hot-air heat, and inadequate ventilation.<sup>251</sup> Thus, homeowners as well as building inspectors must be educated as to how to address problems of mold, moisture and inadequate ventilation before they become too expensive to remedy. This would mean inspectors looking at buildings with an educated and proactive eye, and homeowners fighting asthma triggers before they grew unmanageable.<sup>252</sup>

For tenants living in premises managed by owners, the costs of making a complaint about housing conditions may not outweigh the benefits of potential home improvements. In Lewiston, for example, a multi-family unit with subsidized housing was recently condemned. In this case, a clogged drainage system caused mold to get into the walls of the building. As a result, the whole building had to be gutted and rebuilt. This, of course, cost an immense amount of both time and money. Meanwhile, the people who had occupied this subsidized housing had to find another place to live for the six months it took to make the building habitable.<sup>253</sup> It is easy to see from this example why many people with lower incomes would choose to simply live with a little bit of mold when the alternative is complaining and getting thrown out on the street to find another place to live. This problem becomes even more relevant when it is noted that in Maine there is already a housing shortage and little to no construction of new, multi-family dwellings.

Furthermore, condemnation of buildings is a lengthy and expensive process, and few landlords could afford to keep rental property if regulations on moisture were stringently

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<sup>251</sup> Bangor News.Com. March 4, 2004.

<sup>252</sup> For example, as one Maine Contractor pointed out, mold is relatively easy and inexpensive to address if you catch it before it pervades foundations and walls. Interview on March 15, 2004.

<sup>253</sup> Interview with Gildace Arsenault.

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observed. This could eventually result in a decreased supply of affordable rental housing. Once again, this will impact the people with the lowest amount of economic resources to find another suitable place to live.

Maine is beginning to recognize the tremendous cost of asthma to the state, and is coming up with ways to address it. The American Lung Association of Maine has drafted new legislation to establish a new public health program within the Maine Bureau of Health to address the growing concern with asthma.<sup>254</sup> Furthermore, schools in Maine are beginning to take initiative to teach teachers and students basic information about asthma and asthma management.<sup>255</sup> In this age of increasing awareness, it is only a matter of time before the homes people live in become implicated as a cause of the asthma they are suffering from; thus, now is the time to enact change to make the homes people live in safe.

### **IV. MASSACHUSETTS**

#### **Introduction & Demographics**

The asthma situation in Massachusetts is particularly grim, and at epidemic proportions. Annually, the costs associated with pediatric asthma statewide are over \$77 million. In the neighborhood of Roxbury in Boston, the incidence of asthma is five times that of the already high statewide average.<sup>256</sup> The extraordinary rates of asthma in Massachusetts are likely to stem largely from poor indoor air quality of the buildings and homes throughout the state. The state government and Department of Public Health are making efforts to combat this extraordinary problem. A statewide registry is being formed to accurately measure and track the prevalence of

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<sup>254</sup> “Asthma Walk” [www.maineLung.org](http://www.maineLung.org). 3/17/04

<sup>255</sup> *Id.*

<sup>256</sup> *Attacking Asthma Report*, Senate No. 2505. Senator Cheryl A. Jacques, Chair. December, 2002. <http://www.state.ma.us/legis/senate/asthma.html>.

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asthma, and legislation has been passed encouraging the adoption of school programs that ameliorate the air quality of schools and allow children to carry their inhalers with them rather than store inhalers at the nurses' offices.<sup>257</sup> The legislature appears interested in enacting changes to combat this problem and may be amenable to proposals that would ameliorate the grim situation, both as a matter of public health concerns and economic frugality.

According to the 2000 census data, Massachusetts has a population of 6,349,097 people, with a density of 809.8 persons per square mile. With respect to age, there are 1,500,064 residents under the age of 18 (23.6% of total state population), including 397,268 residents under the age of 5 (6.3%). 860,162 Massachusetts residents (13.5%) are 65 years or older. Ethnically, Massachusetts consists of 84.5 percent white residents, 5.4 percent African-American residents, and 6.8 percent Latino residents. The median household income for Massachusetts residents is \$50,502, with 9.3% of residents falling below the relevant poverty level. Of those residents in the very low income brackets, 13.8 percent own homes, while 43 percent rent.<sup>258</sup>

Within Massachusetts, three locations were chosen to examine the interplay between the building and sanitary codes and the actual enforcement of these statutory guidelines: Boston, Westfield, and Springfield. Asthma rates are highest in both counties in which these municipalities are found, Suffolk and Hampden, respectively.

Boston is a diverse, historical city composed of many legendary and grand buildings dating back to the early years of our nation. While these remarkable sites may be beneficial to the tourism industry, they may have a detrimental effect on the asthma rates of Boston residents. Of Boston's population of 589,141, 54.5 percent reported themselves as white, 25.3 percent identified as African-American, 14.4 percent as Latino and 7.5 percent identified as Asian. Of

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<sup>257</sup> *Id.*

<sup>258</sup> FedStats, *FedStats MapStats State Data*, <http://www.fedstats.gov/qf/states/25000.html>.

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Boston's 239,528 occupied housing units, 67.8 percent are renter occupied housing units as opposed to owner-occupied.<sup>259</sup> The number of state public housing units in 1999 was 2,860, while the number of subsidized housing units was over 49,000.<sup>260</sup> The median household income in Boston (\$39,629) is considerably lower than the statewide median, with 19.5 percent falling below the poverty level. Of the very low income residents, 17.4 percent own residences while 46.8 percent rent.<sup>261</sup> The racial diversity of Boston's population, coupled with the high percentage of tenancies and large numbers of assisted housing, makes Boston unique compared to the smaller, somewhat less urban Massachusetts cities.

Springfield is and has been a major industrial center throughout its history. Since its settlement in the 17<sup>th</sup> century, Springfield has housed trading posts, cotton factories, paper mills, iron and automobile plants, and continues to do so today.<sup>262</sup> The population of Springfield is 152,082, with 56.1 percent of the population identifying as white, 27.2 percent as Latino, 21.0 percent as African-American and 1.9 percent as Asian. Of the 57,130 occupied housing units in Springfield, 50.1 percent are renter-occupied. The state provides 1,069 public housing units. Economically, the median household income in Springfield falls well below the state median at \$30,417, with 23.1 percent below the poverty level. Of the very low income residents, 17.8 percent own homes while 57.3 percent rent.<sup>263</sup>

The City of Westfield is the smallest city assessed in this study of Massachusetts. Westfield was once largely an agricultural area and, although some agriculture still exists, today manufacturing and industry provide employment for most citizens and a sound economic base

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<sup>259</sup> *Id.*

<sup>260</sup> *Id.*

<sup>261</sup> FedStats, *FedStats MapStats State Data*, <http://www.fedstats.gov/qf/states/25/2507000.html>.

<sup>262</sup> DHCD, MA Historical Commission, <http://www.state.ma.us/dhcd/iprofile/281.pdf>.

<sup>263</sup> FedStats, *FedStats MapStats State Data*, <http://www.fedstats.gov/qf/states/25/2567000.html>.

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for the municipality.<sup>264</sup> The homogenous population of Westfield is 40,072, with 94.5 percent of residents identifying as white, 5.0 percent identifying Latino and less than one percent identifying as African-American. Of the 14,797 occupied housing units, 32.2 percent are renter-occupied. The state provides 455 public housing units. The median household income in Westfield is \$45,240, with 11.3 percent of its residents falling below the poverty level. Of Westfield's very low income residents, 11.4 percent own homes and 42.9 percent rent.<sup>265</sup>

Given this statistical compilation, it is obvious that each city is distinguished by its racial composition, population, and the ability of its citizenry to afford housing. Each of these statistical groupings has profound ramifications on the health of the cities' respective citizens, and the concerns and priorities of the city. Complicating the analysis of each city is the fact that the prevalence of asthma has been found to differ considerably along racial, age, and economic lines.<sup>266</sup> The prevalence of asthma has been shown to vary considerably with respect to income. The Air Pollution and Respiratory Health Branch of the CDC estimates that in Massachusetts, asthma prevalence is at 17.8 percent among those whose income is less than \$15,000; 11.4 percent for income between \$15,000 and \$24,999; 10.9 percent for income between \$25,000 and \$49,999; 13.8 percent for income between \$50,000 and \$74,999; and 13.4 percent for income greater than \$75,000.<sup>267</sup> There is a downward trend among prevalence of asthma as income increases, presumably due to the ability to afford better and more frequent healthcare, bringing about an increased ability for those groups to have asthma diagnosed. These rates are influenced by several factors; for example, housing conditions also correlate with income. Housing and

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<sup>264</sup> City of Westfield Gov. <http://www.cityofwestfield.org/aboutus.html>.

<sup>265</sup> FedStats, *FedStats MapStats State Data*, <http://www.fedstats.gov/qf/states/25/2576030.html>.

<sup>266</sup> Centers for Disease Control and Prevention, *supra*.

<sup>267</sup> Air Pollution and Respiratory Health Branch of the CDC, *Table 7: Adult Self-Reported Lifetime Asthma Prevalence Rate (Percent) and Prevalence (Number) by Income and State or Territory: BRFSS 2002*, <http://www.cdc.gov/nceh/airpollution/asthma/brfss/02/lifetime/tableL7.htm>.

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sanitation conditions influence asthma triggers, and the less one is able to control the presence of asthma triggers due to inability to enforce sanitary standards, the more likely it is that someone in the household will develop asthma symptoms. By examining the building and sanitary codes of Massachusetts and the enforcement of these regulations, the relationship between asthma, income, housing, and other regional factors can be better understood.

### **Building Code State Code**

The Massachusetts State Building Code (“Code”) is largely adopted from the BOCA 1996 guidelines, with relatively few changes. The Code is quite thorough overall when compared to the ARC and EPA guidelines, but leaves out some particularly relevant sections that could have a significant impact on the asthma rates of Massachusetts residents. The Commonwealth seems to be taking the health of its citizens into account when adopting these regulations, located in Volume 22 of the Code, chapter 780.

### **Inspection & Enforcement**

The building inspectors in Massachusetts are responsible for ensuring compliance with all components of the Code. The inspectors “shall act on any question relative to the mode or manner of construction and materials to be used in the construction, reconstruction...and the location, use, occupancy, and maintenance of all buildings and structures”.<sup>268</sup> In each city or town, a chief building inspector and “other local inspectors as are reasonably necessary to assist the inspector of buildings...enforce the state building code”.<sup>269</sup> Inspections must be completed prior to issuing a building permit, at particular intervals during the construction, and prior to the issuance of a certificate of occupancy.<sup>270</sup> In issuing a violation, the inspector must give the

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<sup>268</sup> 780 Code Mass. Regs. 106.1

<sup>269</sup> Mass. Gen. Laws Ann. ch. 143 § 3 (West 2002)

<sup>270</sup> 780 Code Mass. Regs. 115.0

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owner a written notification and then give the owner until noon of the following day to begin to ameliorate the violation, unless a particularly egregious violation has occurred, in which case the inspector can prevent all entrance into the building, fix it himself, or demolish the building.<sup>271</sup> Fines and imprisonment may occur for violations of the code, and each day after an issued warning is considered a separate offense.<sup>272</sup>

The Code also provides for a Board of Building Regulations and Standards that administers and updates the Code at least once every five years to examine its effect “upon the cost of building construction and the effectiveness of their provisions for health, safety, energy conservation and security”.<sup>273</sup>

### **Comparison to ARC/EPA Guidelines**

The Code had significant gaps compared to ARC’s recommendations for avoiding plumbing in exterior walls, applying window pan flashing in specific locations, insulating cold water pipes, and foregoing the installation of carpet in damp areas.

Vector control, or “ratproofing” as referred to in the Code, was dealt with quite thoroughly. Corrosion proof materials of specified thickness were required to shield all walls, slab and pipe openings to ensure that rodents were unable to enter.<sup>274</sup> Additionally, buildings without a continuous foundation were provided specific protections against rodents through guidelines for the size and construction materials of the apron, or to ensure that if grade floor slabs are required, there is no space between the slab and walls.<sup>275</sup> These are largely in accord with the EPA and ARC guidelines for ratproofing through the use of corrosion resistant screens and for ensuring airtightness.

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<sup>271</sup> 780 Code Mass. Regs. 121.3

<sup>272</sup> Mass. Gen. Laws Ann. ch. 143 § 94A (West 2002).

<sup>273</sup> Mass. Gen. Laws Ann. ch. 143 § 94H,C (West 2002)

<sup>274</sup> 780 Code Mass. Regs. 1215.3

<sup>275</sup> 780 Code Mass. Regs. 1215.2

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Adequate ventilation is addressed throughout other areas of the Code. Massachusetts specifically requires that every room intended for human occupancy in a building must have either natural or mechanical ventilation. Further, “every bathroom containing a bathtub and/or shower shall be equipped with a mechanical exhaust fan and associated ductwork...such bathroom exhaust shall vent directly to the outside and no exhaust shall terminate in attics or other interior portions of the building”.<sup>276</sup> Cross ventilation is specifically required for any enclosed attic or rafter spaces if ceilings are directly on the underside of the rafters, and the openings for this cross ventilation must be protected from rain and snow.<sup>277</sup> Natural ventilation is similarly required for crawl spaces, and provisions are also given for mechanical ventilation in both the attic and crawl spaces if natural ventilation is not possible.<sup>278</sup> Exhaust systems are provided for in one and two family dwellings. Clothes dryer vents must release moisture to the outdoors and not to the interior space of the building; range hoods must be vented only to the buildings’ exterior and be “substantially air tight”.<sup>279</sup> There are no specifications in the Code for the EPA guidelines of specifically ensuring that fireplaces are airtight, but a variety of statutes require airtightness, and recessed lights are specifically addressed.<sup>280</sup> Directly in line with EPA standards, Massachusetts requires IC rated recessed lights and airtight construction.<sup>281</sup> However, the Code goes even further than the EPA guidelines recommend by stating that a minimum of 25 feet is the required distance between air intakes and car-idling areas.<sup>282</sup> The EPA guidelines only require a distance of ten feet.

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<sup>276</sup> 780 Code Mass. Regs. 1205.2, 1205.2.1

<sup>277</sup> 780 Code Mass. Regs. 1210.1

<sup>278</sup> 780 Code Mass. Regs. 1210.2, 1210.3

<sup>279</sup> 780 Code Mass. Regs. 3618.1.1, 3618.2

<sup>280</sup> 780 Code Mass. Regs. 104.3.8

<sup>281</sup> *Id.*

<sup>282</sup> 780 Code Mass. Regs. 2801.2.2.1

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Moisture regulations are located throughout the Code as well, making analysis particularly difficult. The Code does provide that installation should not be done in bad weather and that the exterior sheathing must be dry before installation can occur.<sup>283</sup> Leakproof flashings are required at the top and sides of all exterior window and door openings.<sup>284</sup> Regarding the foundations of a building, the floor slab must be insulated with approved materials, and water is to be deposited from the roof five feet away from the foundation.<sup>285</sup> Routing the run-off water only five feet away, however, is considerably less than the ten feet the EPA recommends. Worded identically to the EPA standard, in crawl spaces, Massachusetts provides for a six-millimeter thick polyethylene moisture barrier over the exposed soil, and before the basement floor is laid down.<sup>286</sup> In the bathroom and other repeatedly damp areas, water-resistant gypsum backer board is required and floor surfaces of showers are to be non-absorbent waterproof materials.<sup>287</sup> Exterior walls are to be faced with weather resistant coverings, and in any crevice where moisture could accumulate, adequate caps or drains must be provided to prevent water damage.<sup>288</sup> Finally, the Code, identical to the ARC/EPA guidelines, requires that the garage floor be sloped toward the main vehicle entry so that water will not accumulate.<sup>289</sup>

Thus, the Code addresses all three of the most relevant asthma triggers. In fact, Massachusetts matches, and in some cases is even more stringent than, the ARC/EPA guidelines. The Code comprehensively discusses all moisture in all areas of the house, attempts to create an airtight, comfortable environment, and expressly recognizes the necessity of appropriate and adequate ventilation. However, notable exceptions exist in the area of mold prevention. The

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<sup>283</sup> 780 Code Mass. Regs. 3607.1.2

<sup>284</sup> 780 Code Mass. Regs. 1405.3.10

<sup>285</sup> 780 Code Mass. Regs. 3608.1.3, 1304.2.8

<sup>286</sup> 780 Code Mass. Regs. 3604.5.2.2

<sup>287</sup> 780 Code Mass. Regs. 2503.4, 2907.4.1

<sup>288</sup> 780 Code Mass. Regs. 1403.3, 1405.3.9

<sup>289</sup> 780 Code Mass. Regs. 3603.5.3

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code does address moisture prevention and airtightness but could take a more proactive approach towards mold prevention. There are no codes addressing wall to wall carpeting or plumbing in exterior walls; these would not be particularly difficult to address and could make an incredible difference in the lives of tenants. Overall, the Massachusetts Building Code is on the right track and has begun to prioritize the health of its citizens. Despite these impressive standards, however, asthma rates keep increasing. To combat this trend, the existing Codes may need to be more effectively enforced or the suggested amendments should be included in the Code.

### **Field Research**

The three inspectors interviewed gave surprisingly distinct outlooks and answers to the questions posed. They expressed varying degrees of frustration about their employment and the environmental constraints within which they work. While all had unique situations, one clear and disturbing pattern began to emerge: inadequate funding seems to directly impede the building inspectors in all municipalities from adequately completing their jobs.

### **Westfield**

The Westfield building inspector seemed eager and able to complete an interview. Not surprisingly, life safety and fire safety were his top two concerns when asked to list them, although he noted that all other issues were important but not top priorities.<sup>290</sup> He immediately pointed out that health and respiratory issues were sanitation problems and that individual complaints were quite rare in Westfield.<sup>291</sup> Similarly, a quick negative response came when asked if warnings were ever issued. He saw a very clear demarcation between what is and is not acceptable, and had the responsibility to ensure that what is not acceptable is quickly and

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<sup>290</sup> Interview Building Inspector, Westfield, MA, February 13, 2004.

<sup>291</sup> *Id.*

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efficiently ameliorated.<sup>292</sup> This lack of wiggle room in the Code forces him to immediately write a violation for all people not in compliance, and if they choose not to comply, then a court injunction is in order. Despite this hard line attitude, violations only occur a couple of times a month, and generally for something relatively minor like a sprinkler not working properly.<sup>293</sup>

No training on respiratory illnesses has ever taken place in Westfield.<sup>294</sup> Interestingly, the building inspector himself has dealt personally with environmentally-induced asthma, as both his wife and daughter have it. The first-hand account that he provided on the effects of this illness was intriguing, because they have taken all of the carpeting out of their house and installed air filters in accordance with EPA guidelines, yet refuse to get rid of their pets. Admittedly, this exacerbates their conditions, but it is something that they are unwilling to do. He also stated that the filters they used worked quite well, but only when maintained and properly cleaned.<sup>295</sup> Rather than altering the Code, he suggested educating the public. Regulating and enforcing maintenance of air filters seems difficult given the frequency with which they must be cleaned, so compelling people to do so for their own health and safety may be more effective than creating punitive measures for not doing so.

This emphasis on public education and knowledge, as opposed to a regulatory approach, may cost more to implement, yet ultimately may be more effective in combating the asthma epidemic by empowering victims to change their situation. Unfortunately, while this may work in middle-class homeownership neighborhoods, education may not solve the problems of the poorer asthma sufferers. Many of these people are tenants, and cannot choose to tear up carpeting or cannot afford top-of-the-line air filters. While educating that pet dander can have negative

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<sup>292</sup> *Id.*

<sup>293</sup> *Id.*

<sup>294</sup> *Id.*

<sup>295</sup> *Id.*

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consequences for asthma sufferers may help the poor, this building inspector himself stated that his family was too attached to their pets, and chose the comfort of their pet over easier breathing.

The population of Westfield may very well have the financial resources and time available to devote to educating the relatively small population about ways to improve their indoor air quality. However, the practicality of this proposal may not span across the state, as many municipalities are struggling to fund building inspectors at all, much less programs supplementing the state regulations and enforcement procedures in place.

### **Springfield**

In Springfield, the building inspector was certainly eager to talk about his job but was not as easy to reach as the Westfield inspector. For the most part, his responses did not deviate much from the Westfield inspector. One notable divergence, however, was that Springfield's inspector seemed much more relaxed in his ability to write violations of the code, even referring to them as "warnings of violations".<sup>296</sup> The process of finding, enforcing and tracking a violation in Springfield appeared much less rigid than in Westfield, and appeared to give the inspector the ability to decide both how much time should be given to ameliorate the violation and what level of thoroughness would be used in ensuring compliance. He had received absolutely no training on the relationship between consumer health and building issues.<sup>297</sup>

The most striking aspect of the interview arose at the end when he stated that "you can make all the changes you want in the building code, but unless there are inspectors to enforce the code, it doesn't make a bit of difference".<sup>298</sup> In Springfield, local political pressures and economic constraints repeatedly led the municipality to cut the number of inspectors until he was

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<sup>296</sup> Interview Building Inspector, Springfield, MA, February 13, 2004.

<sup>297</sup> *Id.*

<sup>298</sup> *Id.*

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the only building inspector.<sup>299</sup> His frustration with his workload was quite evident, as he suggested implementing a section in the building code or administrative laws that regulated the number of inspectors available in a locale so that an adequate proportion would exist.<sup>300</sup> The economic and time constraints certainly act as a drain on the quality of the inspections provided and do not allow him to focus on anything other than the most important life safety issues. Unfortunately, he does not have the luxury of focusing on issues like indoor air quality; instead, his extremely limited time must be spent addressing life-threatening issues such as obstruction of fire exits.

### **Boston**

In Boston, the answers to the standard questions were not terribly different from the other interviews conducted. Structural integrity, fire safety and egress were all listed immediately as top concerns, while places of assembly were noted repeatedly by the inspector as high priorities when ensuring that life safety regulations were met.<sup>301</sup> An extremely busy climate seems to rule the Boston inspector's priorities and interests. Numerous individual complaints were noted, indicating a difference from other municipalities most likely due to the sheer number of tenants in Boston. The presence of an on-call inspector was also unique, but apparently necessary in such a large city, where emergencies happen frequently and someone must immediately assess the structural safety of a building.<sup>302</sup> Also unique to Boston was the tendency for inspectors to avoid writing violations where possible and to simply give warnings. While effectively cutting down on paperwork, this gives inspectors a tremendous amount of discretion in what

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<sup>299</sup> *Id.*

<sup>300</sup> *Id.*

<sup>301</sup> Interview Building Inspector, Boston, MA, March 5, 2004.

<sup>302</sup> *Id.* For example, the prior week an elderly couple smashed their car into a house, and the on-call inspector went to check the foundation to ensure the stability of the building.

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neighborhoods and to whom they issue violations.<sup>303</sup> The individual inspector can choose to issue a warning or a violation based on his own judgment and can define any time limit as appropriate to remedy the violation.<sup>304</sup> It additionally seems as though follow-up inspections to ensure compliance are done at the will of the inspector and are not carefully monitored. The inspector stated that “say we give them two weeks to fix it, then we would be responsible for checking back to find out the status, but this is all a matter of individual choice”.<sup>305</sup> It may be that inspectors take these follow-up visits seriously and check to ensure that all specifications are up to the Code, but given the workload of new cases that places an extreme stress on the system, it seems more likely that some cases fall through the cracks or are simply not important.

Training sessions are provided to Boston inspectors and seem to make a difference. The inspector stated “they are pretty helpful, they really make you think about things you wouldn’t have otherwise when you go out to inspect”.<sup>306</sup> Although knowledge about the relationship between respiratory illnesses and building attributes is an important first step, given time and monetary constraints, this may not cause enforcement of air quality to be a top priority.

An architect who had tried to incorporate the Healthy Homes guidelines into a building project provides the perspective of a regulated party. When asked if implementing these guidelines was more arduous than building a home without them, the architect responded that it was not more arduous but certainly more expensive.<sup>307</sup> To put a more natural formaldehyde-free

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<sup>303</sup> *Id.*

<sup>304</sup> When asked if the enforcement was the same in all neighborhoods, the inspector responded yes, but when revisiting the question after learning of the discretion inherent in her job, she responded that it was a thin line of when to write a violation and when not to. The inspector stated that sometimes people were living in substandard housing and it would be worse to write the violation and have them on the street, so then it really is the inspector’s discretion, and generally only really serious violations will be issued. *Id.*

<sup>305</sup> *Id.*

<sup>306</sup> *Id.*

<sup>307</sup> Interview, Architect, Boston, MA, March 5, 2004.

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finish on the floors costs three times more than typical carpeting.<sup>308</sup> Thus, actual implementation of the ARC/EPA guidelines may be impractical for typical middle-class families. Until asthma is viewed as the serious and life-threatening illness that it is, residents are going to be quite unwilling to pay more for something that they don't perceive as relevant to their lives.

Overall, the Westfield inspector differed significantly from the more urban environments of Springfield and Boston. Springfield and Boston inspectors are severely limited in their inspections because of the tremendous time constraints placed on them as a direct result of too few building inspectors serving too many people. Respiratory illnesses simply cannot be a priority for them when they must struggle to ensure that basic "life safety" regulations are met. Education may be an effective tool to make people aware of the ramifications of certain practices that pollute their own air; however, education could potentially be expensive and may not reach the poor residents hit hardest by the asthma epidemic. For them, additions to the building code which are properly and decisively enforced may be their only hope. More funding for building inspection departments may need to be granted across the state in order to ensure that this happens. The recognition of the Boston inspector that asthma-related training literally made her take into account things she otherwise would not have while doing inspections is promising and indicates that training building inspectors may indeed be a wise, cost-effective measure. However, even if violations are written by these increasingly health-conscious inspectors, without a reliable enforcement mechanism, these seminars may do little to remedy the asthma epidemic. Simply put, from this analysis, in communities such as Boston and Springfield where the economic situation is bleak and large minority populations who generally have lower incomes and higher rates of asthma are prevalent, more funding is imperative.

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<sup>308</sup> *Id.*

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## Sanitary Code State Code

The relevant statute in Massachusetts regarding the state sanitary code is found in the Department of Public Health, Title 105 of the Code of Massachusetts Regulations (“105 CMR”).<sup>309</sup> Several chapters contained within this title deal with definitions of language contained therein, enforcement standards, and administrative procedures.<sup>310</sup> Massachusetts General Laws (“MGLA”), Chapter 111, sections 127A-127L deal with administrative procedures pertaining to enforcement of the state sanitary code, notices required when a violation is discovered, relevant authorities, and, in general, the procedures to be followed when enforcement is necessary or noncompliance is found.<sup>311</sup>

Located throughout these codes and statutes are several sections dealing with certain triggers of asthma. For example, 105 CMR § 410.550 deals with the minimum standards of human habitation pertaining to pests, rodents, and the like, and 105 CMR § 410.202 deals with ventilation standards. While the Sanitary Code does not speak directly to asthma or respiratory problems, numerous sections do relate specifically to certain known asthma triggers.

## Enforcement

Section 127A of the MGLA deals with the administrative aspects of the state sanitary code.<sup>312</sup> It designates authority to the State Health Department regarding standards of fitness for human habitation. Additionally, it enumerates the options available to the local boards of health (the Commissioner of Housing Inspection in Boston) when enforcement of the State Sanitary Code is necessary. For example, where there is a failure to comply with standards of fitness for human habitation (as defined in 105 CMR; e.g., failure to provide adequate ventilation to the

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<sup>309</sup> 105 Code Mass. Regs. 410.

<sup>310</sup> *Id.*

<sup>311</sup> Mass. Gen. Laws Ann. ch. 111, §§ 127A-127L (West 2003).

<sup>312</sup> *Id.* at § 127A.

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outdoors pursuant to 105 CMR 410.280) or where the conditions materially impair the health of premises occupants, the local authority has the ability to arrange for building demolition. While delegating authority to local boards, this section also reserves the power of the state to intervene when the local board fails to act in a timely manner.<sup>313</sup>

Section 127B of the MGLA sets forth the manner in which a local authority can order compliance with the State Sanitary Code.<sup>314</sup> When a building is deemed unfit, the local commissioner may force the owner or occupant to vacate the premises, put the premises in a clean condition, or otherwise comply with the relevant part of the State Sanitary Code being violated.<sup>315</sup>

The requisites necessary for filing a sanitary code violation petition are found in section 127C of the MGLA.<sup>316</sup> Pursuant to this section, a petition may be filed by a tenant, any relevant local court, or the local board whenever there is a suspected or actual violation of the State Sanitary Code. Thus, even when no actual violation of the Sanitary Code is found, a tenant may file a petition provided that there is sufficient evidence to indicate a likely violation.<sup>317</sup> The fee for filing such a petition is two dollars, and after a petition is filed, the party against whom it is filed has 14 days to answer.<sup>318</sup> It is additionally important to note that any agreement entered into that has the effect of waiving the benefits of the Sanitary Code enforcement procedures is considered void as it is against public policy.<sup>319</sup>

The State Sanitary Code is located in 105 CMR 400. Chapter I of the State Sanitary Code sets forth the purpose, scope, authority, and general administrative information associated

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<sup>313</sup> *Id.*

<sup>314</sup> Mass. Gen. Laws Ann. ch. 111, § 127B (West 2003).

<sup>315</sup> *Id.*

<sup>316</sup> Mass. Gen. Laws Ann. ch. 111, § 127C (West 2003).

<sup>317</sup> *Id.*

<sup>318</sup> Mass. Gen. Laws Ann. ch. 111, § 127D (West 2003).

<sup>319</sup> Mass. Gen. Laws Ann. ch. 111, § 127K (West 2003).

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with the State Sanitary Code. 105 CMR 400.015 delegates authority to the local boards to adopt standards which may be stricter than the state sanitary code if necessary and within the power assigned by the General Laws. Those charged with enforcing the State Sanitary Code also have the authority to inspect, enter, and examine premises with the goal of ensuring the welfare of the people of the Commonwealth of Massachusetts.<sup>320</sup> Local boards of health are given authority to perform these inspection and enforcement functions.<sup>321</sup>

The State Sanitary Code additionally sets out the administrative procedures for serving orders and requesting hearings, appeals, penalties, and variances.<sup>322</sup> Generally, once an order is served, the person on whom it is served can request a hearing and the hearing shall commence no later than 30 days after the request.<sup>323</sup> 105 CMR 400.800 allows the state to grant variances if enforcement of the Sanitary Code would be unjust, provided that the variance does not conflict “with the spirit of any minimum standard established by the State Sanitary Code.”<sup>324</sup>

### **Comparison to ARC/EPA Guidelines**

Chapter II of the State Sanitary Code further defines the standards of fitness for human habitation, and is the relevant section for comparison to the guidelines set out by ARC and the EPA. The purpose of this chapter is to provide for the protection of health and well-being of housing occupants, to assist in enforcement of the State Sanitary Code, and to provide legal remedies.<sup>325</sup>

Fitness for human habitation of kitchen facilities is discussed in 105 CMR 410.100. While this section appears to be primarily concerned with enforcement for food preparation

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<sup>320</sup> 105 Code Mass. Regs. 400.010-400.100 (2004).

<sup>321</sup> 105 Code Mass. Regs. 400.200.

<sup>322</sup> 105 Code Mass. Regs. 400.400-400.900.

<sup>323</sup> 105 Code Mass. Regs. 400.500.

<sup>324</sup> 105 Code Mass. Regs. 400.800.

<sup>325</sup> 105 Code Mass. Regs. 410.000.

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purposes, it does provide standards for space available and storage space, both of which can affect asthma triggers. For example, this section requires kitchen surfaces to be smooth and kept free from defects that would make it difficult to keep clean.<sup>326</sup> The same is required of all bathroom facilities.<sup>327</sup> Dust, dirt, and mold are all associated with asthma triggers so ensuring that kitchen surfaces are easily cleanable certainly will have the effect of reducing the prevalence of such triggers. These standards are in line with the ARC guidelines, although the ARC guidelines go further in their specifications and recommend that in addition to the surfaces being smooth they not contain possible reservoirs for moisture or mold.<sup>328</sup>

The Sanitary Code addresses carpeting and absorbent flooring in bathrooms and kitchens.<sup>329</sup> While ARC recommends that there be no carpeting in wet areas, and the EPA says that wall-to-wall carpeting should not be used in such areas, the Sanitary Code specifications have a similar effect. It requires that in such areas, a smooth, noncorrosive, nonabsorbent and waterproof covering be used.<sup>330</sup> It does not, however, prohibit the use of carpeting in those areas, provided that the carpeting has a solid, nonabsorbent, water repellent backing that will prevent moisture from passing through to the floor below.<sup>331</sup> Wood is allowed as kitchen flooring provided it has a water resistant finish and has no cracks that would allow accumulation of food or dirt or provide for the harborage of insects.<sup>332</sup> The Sanitary Code attempts to prevent the accumulation of moisture, a goal also set by the ARC and EPA guidelines, but the Sanitary Code is less preventative.

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<sup>326</sup> 105 Code Mass. Regs. 410.100.

<sup>327</sup> 105 Code Mass. Regs. 410.150.

<sup>328</sup> Asthma Regional Council, *Building Guidance for Healthy Homes*, <http://www.asthmaregionalcouncil.org/about/housingplan.html> (April 4, 2002).

<sup>329</sup> 105 Code Mass. Regs. 410.504.

<sup>330</sup> *Id.*

<sup>331</sup> *Id.*

<sup>332</sup> *Id.*

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Ventilation standards, discussed in sections 410.202 and 410.280, provide that heaters shall be properly vented to a chimney or otherwise by any means so as to vent to the outdoors.<sup>333</sup> Additionally, each habitable room of a residence, including bathrooms, should provide either a window or door (or like structure) to the outdoors, or a means or mechanical ventilation to the outdoors.<sup>334</sup> Both ARC and the EPA require mechanical ventilation to the outdoors from bathrooms, and the EPA also specifies that the ventilators be operational at given time intervals.<sup>335</sup> These standards are likely not practical for the older buildings which are subject to the Sanitary Code. Another area where the Sanitary Code can be improved is in air filtration. While the EPA specifies that air filters be installed, the Sanitary Code does not address the issue.

An owner of a building shall provide adequate sewage and drainage either connected to a public sewerage system or, if connection to public sewerage system is not practical, the owner shall provide an adequate means of sewage disposal.<sup>336</sup> These requirements have the potential to be crucial to asthma prevention because they can be used to ensure that rooms, floors, and basements be relatively flood, dampness, and moisture-free. The EPA has similar recommendations, although they are much more particular in their specifications for how basement floors are constructed.

The owner of a dwelling is additionally responsible for keeping the residence free from infestation by rodents, insects, and skunks, and is responsible for the extermination of such animals.<sup>337</sup> This may be done by killing or trapping the animals, eliminating their sources of feeding, and other legal pest removal techniques. The means by which insecticides are sprayed

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<sup>333</sup> 105 Code Mass. Regs. 410.202.

<sup>334</sup> 105 Code Mass. Regs. 410.280.

<sup>335</sup> ARC, *Building Guidance for Healthy Homes*, <http://www.asthmaregionalcouncil.org/about/housingplan.html> (April 4, 2002).

<sup>336</sup> 105 Code Mass. Regs. 410.300.

<sup>337</sup> 105 Code Mass. Regs. 410.550.

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within the residence is regulated by 333 CMR 13.00 and residents must be given notice prior to spraying. While the ARC guidelines address pests in homes, they speak more directly to the issue of preventing pests from entering homes. The Sanitary Code requires that residences be free from pest and insect infestation, and if enforced strictly, could be used to effectively ensure compliance with keeping homes pest-free. The EPA provides more strict measures to help prevent pest infestation and to alleviate homes of such infestations, and would be helpful in assisting residents, owners, and inspectors expedite the process of complete pest removal. However, the Sanitary Code additionally provides specifications for screens on doors and on windows opening to the outdoors.<sup>338</sup> In addition to requiring that the screens be no less than 16 mesh per square inch, they are required to be “tight-fitting as to prevent the entrance of insects and rodents around the perimeter.”<sup>339</sup> The Code requires tight-fitting screens with the express intention of preventing pest infestation. Compared to the state code, the ARC/EPA guidelines have stricter overall standards and more preventive measures; however, the state code does address each identified asthma trigger and includes some preventive language. The Code appears to be a reasonable foundation which could be strengthened to adequately address asthma triggers.

One of the problems with the Massachusetts State Sanitary Code is that it is at times too specific. Specificity can be helpful with respect to ensuring that residences are in compliance and are habitable. Yet certain parts of the Sanitary Code seem too specific to be sufficiently enforced. It may be impractical, for example, for an inspector to ensure that all kitchen surfaces are free from defects that would seriously hamper their cleaning. But at the same time, having surfaces that are free from dust, dirt, and mold would reduce asthma triggers. One problem with

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<sup>338</sup> 105 Code Mass. Regs. 410.551, 410.552.

<sup>339</sup> *Id.*

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enforcing Massachusetts's State Sanitary Code is that, especially in municipalities with larger populations, enforcement of every aspect of the Code may be impractical.

### Case Law

There was no case law regarding violations that speaks directly to the issues of Sanitary Code violations in relation to asthma or respiratory problems. There were, however, cases regarding enforcement of the Sanitary Code sections that address asthma triggers, namely, pests and sewage. In *Cruz Management Co. v. Thomas*, the court found a breach of implied warranty of habitability where the landlord failed to prevent pest infestation. The ruling was significant because the court ruled against the landlord, despite repeated attempts to alleviate the problem. The fact that the conditions persisted despite attempts by the owner to remedy them was sufficient for the court to find a breach.<sup>340</sup> In *Simon v. Solomon* the court found that a landlord's refusal to prevent flooding on numerous occasions, in addition to pest infestation and trash, violated the implied warranty of habitability and implied breach of habitability.<sup>341</sup> The courts have also enforced the Sanitary Code where a landlord failed to provide heat and allowed the presence of cockroaches, either willfully or intentionally.<sup>342</sup> While the court held that the landlord in this case had a right to be heard while the violations continued, they did recognize a violation of the Sanitary Code where a landlord not only intentionally caused the violations, but where the landlord additionally was not aggressive enough at stopping the violations.<sup>343</sup> This is particularly crucial with respect to asthma because pests are a major asthma trigger and the court makes it clear that the allowance of pests will not be tolerated.

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<sup>340</sup> *Cruz Manag. Co. v. Thomas*, 417 Mass. 782 (Mass. 1994).

<sup>341</sup> *Simon v. Solomon*, 385 Mass. 91 (Mass. 1982).

<sup>342</sup> *Gordon v. Fay*, 382 Mass. 64 (Mass. 1980).

<sup>343</sup> *Id.* at 71-72.

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It may be particularly difficult to bring a claim based on sanitation statutes because some sections are broad and do not define standards with enough particularity. While courts have found breaches of implied warranty of habitability with respect to pests, for example, the code does not specifically define what constitutes a pest infestation. The cases primarily deal with major pest infestations and with landlords' refusals to deal with such problems, but even a minor pest infestation can increase asthma triggers. In order to allow for claims related to asthma triggers, the sanitation code would need to clearly define stricter standards.

### **Field Research**

The general consensus among Sanitary Code inspectors interviewed was that when they do inspect, they attempt to inspect and enforce all aspects of the code. While they are all well-versed in the contents of the Sanitary Code, several components of the inspection and enforcement procedures can be improved upon. Based on the information obtained from these interviews, the major obstacles to more effective inspection and enforcement were lack of proactive inspection and enforcement on the part of inspectors (i.e., they almost exclusively respond to complaints) and lack of education specifically relating to asthma and other respiratory problems. It was evident, however, that the inspectors were making every attempt possible to address health problems.

### **Westfield**

In Westfield, the Sanitary Code inspector estimated that in 99.5% of inspections, the inspections were initiated by an individual's complaint. While a majority of those complaints were tenant-generated, some were filed by an owner against a tenant.<sup>344</sup> Generally, complaints are received by the Health Department, either written or by telephone, at which time an inspection commences. During the inspection, the inspector will check the entire residence

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<sup>344</sup> Interview Housing Inspector, Westfield, MA, March 17, 2004.

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looking for any type of Sanitary Code violations at all.<sup>345</sup> This is a crucial aspect of inspection because despite how minor a cited violation may be, the inspector will usually check the entire premises for additional violations. For example, if a tenant complains about ventilation problems, the inspector will inspect the entire premises citing any other violations, such as pest infestation, lack of hot water, mold, etc. In addition, if a child under six years old lives in the residence, the inspector will check for lead paint violations by checking up to two-dozen surfaces within the residence.<sup>346</sup>

In instances where a violation is found, the inspector will give a notice of the violation and file an order to correct. Depending on several factors, including severity of the violation, nature of the violation, and whether the violator makes a good-faith attempt to correct the problem promptly, the party responsible for the violation has up to 30 days to make the necessary corrections. After the 30 days (or less, depending on the aforementioned factors), an order can be issued by the court.<sup>347</sup>

In response to questions about the frequency of certain types of complaints, the inspector responded that mold probably accounts for 20 to 30 percent of all complaints, while insect and pest infestation accounts for a large portion as well.<sup>348</sup> He noted that pest infestation is problematic because it often will only be discovered upon inspection for another alleged violation due to residents' embarrassment about having an insect or pest problem.<sup>349</sup> If pests and insects are not being complained of and only found upon inspection, it presumably is a much larger problem than indicated by inspectors.

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<sup>345</sup> *Id.*

<sup>346</sup> *Id.*

<sup>347</sup> *Id.*

<sup>348</sup> *Id.*

<sup>349</sup> *Id.*

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When asked about education or training specifically related to asthma or breathing problems, the inspector replied that he was never required to pursue it. He did, however, mention that he attended a seminar on mold (a mandatory seminar) and indicated his awareness of asthma as a growing problem in housing.<sup>350</sup> While the connection between mold and asthma was not brought to his attention at the time, it is important that certain triggers of asthma are being recognized as problematic. Westfield, as a wealthy town relative to other Massachusetts municipalities, might possess the capacity to fund the additional education necessary for inspectors to become sufficiently knowledgeable with respect to asthma.

The Westfield inspector expressed concern that asthma is becoming increasingly problematic and suggested that one major reason for this was that houses are being built “tighter”, meaning that they are wrapped in Tyvek and more tightly insulated. This leads to a decrease in air circulation, making it easier for certain triggers of asthma to accumulate.<sup>351</sup> Although the Sanitary Code does have specifications for sufficient ventilation, changing conditions are creating new and different needs which need to be considered when assessing current codes and new additions to the codes.

### **Springfield**

The initiation of an inspection and procedure for carrying it out in Springfield closely mirror those of Westfield. Almost all of the complaints for Sanitary Code violations were generated by tenants.<sup>352</sup> Generally, a residence is inspected for violations from front to back, room to room, followed by walls, then ceilings. After the bedrooms and common rooms are inspected, the inspector will check the kitchen(s), then the bathroom(s), followed by hallways, and then the exterior. The inspector will then proceed to look at the electrical connections,

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<sup>350</sup> *Id.*

<sup>351</sup> *Id.*

<sup>352</sup> Interview Housing Inspector, Springfield, MA, March 10, 2004.

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plumbing and leakage, and will make sure that smoke detectors have been installed and renewed with the past five years.<sup>353</sup> The inspector's description of the inspection procedure as well as his attitude indicated that Springfield's inspectors make every effort to inspect residences to the code as thoroughly as possible.

However, while the inspectors do know the Sanitary Code quite well, they too lack training or education specifically related to asthma.<sup>354</sup> Although the inspector indicated that he had training on lead paint, there was no training on asthma or respiratory problems overall. Thus, while they are making a good-faith attempt to inspect homes as diligently and as thoroughly as possible, training in this regard will certainly aid in the detection of asthma triggers.

Unfortunately, Springfield is noticeably more economically depressed than Westfield, for example, and thus may be less able to provide the necessary resources to fund such education. Despite this lack of asthma-related education and training, the inspector and those who filed the complaints do recognize potential triggers of respiratory problems. The Springfield inspector indicated that flooding, dampness, mold, mildew, ventilation, and pest infestation were among some of the more common sources of complaint.<sup>355</sup>

### **Boston**

The procedures for inspection in Boston are similar to those in Westfield and Springfield. As in those municipalities, an overwhelming majority of inspections in Boston are initiated by individuals' complaints.<sup>356</sup> When a violation is found, an order to correct is served on the violator.<sup>357</sup>

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<sup>353</sup> *Id.*

<sup>354</sup> *Id.*

<sup>355</sup> *Id.*

<sup>356</sup> Interview Boston Inspectional Services Department, Boston, MA, March 10, 2004.

<sup>357</sup> *Id.*

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When an inspector conducts an inspection, he or she will inspect the entire residence, citing any Sanitary Code violations whether they were complained about or not.<sup>358</sup> As in Springfield and Westfield, the inspectors are well-versed in the entire Sanitary Code and generally know what to look for when conducting an inspection.

Presumably indicative of the burden placed on Boston's inspectors, it was difficult to contact them because they were frequently out responding to complaints or conducting inspections. Boston is more densely populated than both Westfield and Springfield, and thus lack of manpower is possibly a greater problem with respect to Sanitary Code enforcement. In addition to providing more resources toward inspection and enforcement of the Sanitary Code, asthma education for inspectors as well as residents is crucial.

### **Sanitation Conclusion**

Because asthma is a problem in Massachusetts, and has been growing increasingly problematic, remedial steps must be taken. Education for inspectors, residents, and owners can only serve to help alleviate the problem. While inspectors are generally knowledgeable about the Sanitary Code, asthma education will help them more effectively identify and deal with asthma triggers. And residents and owners, with proper education, can recognize those potential asthma triggers that would warrant a complaint and an inspection. Some municipalities, however, may have more financial resources available to provide the education, potentially creating regional disparities in housing sanitation enforcement. Additionally, if inspectors, owners, and residents are more knowledgeable in this regard, more resources will be needed to address complaints and to correct the problems.

Additionally, addressing some Sanitary Code problems may cause deficiencies in other areas of the Sanitary Code. For example, because homes are being built much tighter, an

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<sup>358</sup> *Id.*

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occupant may tend to open windows or doors more often. Steps should be taken to address holes in the Sanitary Code. Fortunately, inspectors throughout the state are currently discussing changes to deal with holes, vague language, and changed conditions.<sup>359</sup>

### **Statewide Conclusion**

Overall, the Building Code and Sanitary Code provide clear ways of ameliorating asthma triggers in the home environment. Although not identical and slightly more lenient than the ARC/EPA guidelines, both the Building and Sanitary Codes in Massachusetts could easily be altered to include more stringent guidelines. However, enforcement remains a huge problem here. Regarding building inspectors, the lack of economic resources flowing to their divisions severely hampers their ability to complete a thorough review, and may significantly impair their ability to ensure compliance with a warning or violation. Sanitary Code inspectors are likewise restricted in their abilities to inspect proactively. Courts have certainly been willing to step in and enforce the rights of tenants to ensure that their homes are at least minimally habitable, but no concrete evidence exists that a court would see the presence of asthma triggers as violations of habitability requirements and be willing to enforce something not directly life threatening. Because of the economic disparities in each municipality and the direct correlation between racial class, income, and asthma, the codes must be enforced across the board so that the powerless lower class does not have to suffer a disproportionate burden. In order to remedy this unfortunate trend, statewide action must be taken to examine, enforce, and supplement the existing codes because politically powerless minorities should not have to bear this burden alone.

Additionally, asthma-related education would certainly have a tremendous impact on both building and sanitation inspectors in their abilities to identify sources of asthma triggers. Again, funding is necessary and available more readily in some municipalities than in others. If

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<sup>359</sup> Interview Housing Inspector, Westfield, MA, March 17, 2004.

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the education programs are viewed as a preventative measure and as a means of ultimately decreasing healthcare costs, however, legislatures and the public would be more accepting of such a proposal.

### **V. NEW HAMPSHIRE**

#### **Introduction**

The State of New Hampshire is a relatively small state. As per the 2000 Census, only 1,235,786 people resided within its 8,968 square miles.<sup>360</sup> This computes to an average of 137.8 persons per square mile.<sup>361</sup> New Hampshire is also overwhelmingly populated by Caucasians. A tremendous 96.0 percent of the people who live in New Hampshire are white.<sup>362</sup> 50.8 percent of the population is female while a balanced 25.0 percent of the people are under the age of eighteen.<sup>363</sup> In terms of education, 87.4 percent have graduated from high school but only 28.7 percent hold a bachelor's degree.<sup>364</sup> Although the median household income is just slightly

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<sup>360</sup> U.S. Census Bureau, *State and County Quick Facts: New Hampshire*, <http://quickfacts.census.gov/gfd/states/33000/html> (accessed March 8, 2004).

<sup>361</sup> *Id.*

<sup>362</sup> *Id.* For a further breakdown of the remaining 4 percent, see Appendix 4-B

<sup>363</sup> *Id.*

<sup>364</sup> *Id.*

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below the \$50,000 mark, 6.5 percent of the population currently resides below the poverty level.<sup>365</sup>

Like several other New England states, New Hampshire recently began to track the prevalence of asthma among its residents. The New Hampshire Department of Health and Human Services (“DHHS”) began the Asthma Control Program in October, 2001 after being awarded a three year grant from the Centers for Disease Control and Prevention.<sup>366</sup> The program is still in a planning and development period, but eventually the program seeks to implement a surveillance plan focusing on asthma from a public health perspective. The program issued a report in March 2003, which outlined the impact of asthma on the state’s public health, welfare, and economy between the years 1990 and 2001. What they found is significant. In the year 2000 alone, 796 asthma-related hospitalizations occurred in New Hampshire totaling 2,436 days spent in the hospital.<sup>367</sup> While these hospitalizations cost \$4.1 million alone, the estimated total cost of asthma throughout the state for one year has risen as high as an enormous \$4.6 million.<sup>368</sup> In 2000, New Hampshire hospitals witnessed 6,793 asthma-related emergency visits at a rate of 55.6 per 10,000 people and at a substantial cost of \$3.3 million.<sup>369</sup> Private insurance covered only approximately half of these costs. The taxpayers were held responsible for the difference in the form of Medicare and Medicaid.<sup>370</sup>

Nonetheless, some of the news regarding asthma in New Hampshire is encouraging. New Hampshire asthma rates have decreased within the last ten years. In 1996, the asthma-related hospitalization rates among children were 18.6 per 10,000. As of 2000, this rate dropped

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<sup>365</sup> *Id.*

<sup>366</sup> NH Dept. of Health & Human Services, Asthma Control Program, <http://www.dhhs.nh.gov/DHHS/ASTHMACONTROL/default.htm> (accessed March 18, 2004).

<sup>367</sup> NH Dept. of Health and Human Servs. Off. of Community and Pub. Health, *Asthma in New Hampshire 1990-2001*, [www.dhhs.state.nh.us/DHHS/ASTHMACONTROL/LIBRARY/Data+Statistical+Report.html](http://www.dhhs.state.nh.us/DHHS/ASTHMACONTROL/LIBRARY/Data+Statistical+Report.html).

<sup>368</sup> *Id.* at 4.

<sup>369</sup> *Id.* at 4.

<sup>370</sup> *Id.*

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to 10.8 children per 10,000.<sup>371</sup> Moreover, the asthma-related mortality rate is less severe in New Hampshire than in other states. A relatively modest 18 New Hampshire residents died in 2000 as a direct result of asthma.<sup>372</sup>

### Municipal Demographics

Municipalities in the state of New Hampshire enact additional health and sanitation ordinances. In order to understand municipal-level sanitation requirements in the state of New Hampshire, the sanitation section includes an examination of health and sanitation codes in the following three areas: Berlin, Nashua, and Manchester. These three areas were chosen to provide a diverse range of municipalities.

Berlin is located in Coos County, the northernmost county of New Hampshire. The city of Berlin is the most rural area examined for this report. Berlin's population density is 168 people per square mile, and the population density in Coos County is 18.4 people per square mile.<sup>373</sup> Coos County has the highest poverty rate of the three municipalities examined, with 10 percent of its population below the poverty line.<sup>374</sup>

Nashua and Manchester are included in this report since both Nashua and Manchester have adopted municipal housing ordinances. Both municipalities are located in Southern New Hampshire and are among the largest cities in New Hampshire. The population density in Nashua is 2816 people per square mile, and the population density in Manchester is 3238 people

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<sup>371</sup> *Asthma in New Hampshire* at 4.

<sup>372</sup> *Id.* at 41.

<sup>373</sup> NH Municipalities by Population Density, <http://www.lpnh.org/nh-pop-density> (accessed Feb. 1, 2004). Calculations based on Census 2000 data.

<sup>374</sup> U.S. Census Bureau. *State and County Quickfacts*, <http://quickfacts.census.gov/qfd/states/33/33017.html> (accessed Feb. 1, 2004). Estimates based on Census 2000 data.

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per square mile.<sup>375</sup> Nashua and Manchester have similar county-wide poverty rates, 6.3 and 5.9 percent respectively.<sup>376</sup>

### **Building Code History and Structure of the Code**

New Hampshire has only recently adopted a statewide building code. Prior to 2002, no such state code existed. In its place, each municipality adopted guidelines established by BOCA. However, each municipality was free to choose which edition they would follow. Since BOCA issues a new version of their building code every three years, it was not uncommon for neighboring towns to follow different codes. This had the practical effect of confusing many contractors and architects who provided services in more than one municipality.<sup>377</sup>

There had been many attempts at creating a statewide building code in the past. These attempts, however, all failed as each contractor lobbied for the version that he or she was already familiar with.<sup>378</sup> It was not until January of 2001 that all of the primary construction, design, and code enforcement agencies unified to support the adoption of one single state building code, the International Building Code 2000 (IBC).<sup>379</sup> The IBC is a model code issued by the not-for-profit agency, International Code Council (ICC). The ICC is an association of the three model code organizations headquartered in the United States – BOCA, the International Conference of

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<sup>375</sup> NH Municipalities by Population Density, <http://www.lpnh.org/nh-pop-density> (accessed Feb. 1, 2004). Calculations based on Census 2000 data.

<sup>376</sup> U.S. Census Bureau. *State and County Quickfacts*, <http://quickfacts.census.gov/qfd/states/33/33017.html> (accessed Feb. 1, 2004). Estimates based on Census 2000 data.

<sup>377</sup> Barb Checket-Hanks, *New Hampshire Establishes Statewide Building Code*. [www.achnews.com/CDA/ArticleInformation/RegionalNews\\_Item](http://www.achnews.com/CDA/ArticleInformation/RegionalNews_Item) (accessed February 11, 2004).

<sup>378</sup> *Statewide Building Code Bill Signed by Governor*, [www.agcnh.org/Public/news/legislation.asp](http://www.agcnh.org/Public/news/legislation.asp) (accessed February 11, 2004).

<sup>379</sup> *Id.*

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Building Officials (“ICBO”), and the Southern Building Code Congress International (“SBCCI”).<sup>380</sup>

The IBC passed through both the House and the Senate, and was signed into law by Governor Jeanne Shaheen, effective September 14, 2002.<sup>381</sup> NH ST § 155-A codified the IBC. In conjunction with the building code, New Hampshire adopted the following: International Plumbing Code 2000, 2000 International Mechanical Code, International Energy Conservation Code 2000, and the National Electric Code 2002.<sup>382</sup>

According to the New Hampshire state Fire Marshal, the provisions of the IBC govern all new commercial buildings throughout the state.<sup>383</sup> § 101.2 of the IBC specifically states that, “Detached one- and two-family dwellings and multiple single-family dwellings not more than three stories high...shall comply with the International Residential Code.”<sup>384</sup> The Fire Marshal explains, “New Hampshire has a long standing policy of staying out of one’s home.”<sup>385</sup> The consequence of this exception is potentially far-reaching. While the provisions of the IBC are, for the most part, similar to the ARC/EPA guidelines, the absence of any state code to cover residential housing leaves these homes vulnerable to asthma triggers.

The vast majority of the municipalities in New Hampshire have addressed this lack of a residential code by amending their statutes to include the adoption of the International Residential Code (“IRC”).<sup>386</sup> Nashua and Concord are two such examples. Michael Santa, Chief Building Official of Nashua, explained that although the IRC and the IBC are “very different

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<sup>380</sup> Harry M. Philo, Linda Miller Atkinson, and Harry M. Philo, Jr., Eds. *Lawyers Desk Reference 9th Ed.* § 3:33, West 2004.

<sup>381</sup> *Statewide Building Code Bill Signed by Governor.*

<sup>382</sup> NH ST § 155-A:1 IV (2003).

<sup>383</sup> Phone Interview with New Hampshire Fire Marshal on Thursday, February 25, 2004 at 2:30 p.m.

<sup>384</sup> *International Building Code*, § 101.2.

<sup>385</sup> Int. Fire Marshal.

<sup>386</sup> By law, each municipality is free to adopt any codes they want that are not already included in the state building code as long as the desired code is not less stringent than the IBC. NH ST § 674:51-a (2003).

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codes”, the difference lies not in substance but in form. He remarked that, “The IBC has much more technical language making it not consumer-friendly. The IRC has a lot more detail aimed at allowing the consumer to pick the code up and know exactly what is expected of him.”<sup>387</sup>

When asked whether the IBC’s requirements with regard to asthma triggers will differ greatly from the IRC, Mr. Santa said, “There won’t be much of a difference. We want to prevent moisture in a home just as much as we want to prevent it in a business.”<sup>388</sup> Because the IRC is difficult to obtain and its provisions are apparently very similar to those in the IBC, the following analysis analyzes only the IBC. For this reason, the following conclusions should be analyzed with an eye towards a general comparison rather than a literal, strict reading.

### **Building Code Analysis**

The IBC itself is a very large document that is divided into chapters that almost directly correspond to the various areas of a building (e.g., Chapter 14 – Exterior Walls). The document is one volume with companion plumbing, mechanical, electric, and energy codes. These are all bound in their own, much smaller, volumes incorporated into the larger IBC by reference.<sup>389</sup> States are free to adopt or modify whatever, or however many, provisions they choose. If the IBC is adopted wholly by reference, however, this does not mean that the entire IBC itself is adopted. While the vast majority of the IBC can be adopted in such a general and conclusory manner, § 101.2.1 mandates that any of the appendices (A-J) must be adopted by specific legislation to be included. New Hampshire has adopted by reference the entirety of the IBC, but has failed to adopt the ten appendices.

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<sup>387</sup> Phone Interview with Michael Santa on Tuesday, February 25, 2004 at 10:30 a.m.

<sup>388</sup> *Id.*

<sup>389</sup> *International Building Code*, § 101.4.

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The IBC comes close to meeting almost all of the guidelines set forth by ARC and the EPA.<sup>390</sup> One notable area in which this occurs is in governing the ventilation of a home. Mr. Santa explained that in the past, ventilation was not a top priority in many states' building codes. He admitted, "We face a tough balancing task up here in the North. We have to first make sure that people are warm. On the other hand, we can't make a building too air tight that air is not being circulated throughout the building."<sup>391</sup> In direct response to these types of concerns, the IBC has drafted an entire chapter on ventilation which squares up relatively well with the ARC guidelines.<sup>392</sup> For example, both ARC and the EPA require all bathrooms and kitchens to have fans that exhaust to the outside. Furthermore, the EPA suggests that all outdoor air intakes should be placed at least 10 feet away from any exhaust outlets.<sup>393</sup> § 401.5 of the International Mechanical Code (IMC) specifically states, "Outside air exhaust and intake openings shall be located a minimum of 10 feet from lot lines."<sup>394</sup> Although this does not require the intake opening to be 10 feet away from the exhaust opening, it does require the intake to be at least 10 feet away from areas where car exhaust or other noxious fumes could inadvertently be sucked into the building. Although slightly different, both requirements aim at preventing the same occurrence: the intake of noxious chemicals. Another such example is in the realm of the kitchen. ARC suggests that kitchens with gas stoves and ovens should also have power vented fans or range hoods installed that exhaust to the exterior.<sup>395</sup> Similarly, the IBC states, "Where domestic range hoods...are located within dwelling units, such hoods shall be discharged to the outside through ducts. Such ducts should be airtight."<sup>396</sup>

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<sup>390</sup> See Appendix 7-D-I.

<sup>391</sup> Int. Santa.

<sup>392</sup> *Id.*

<sup>393</sup> *Id.*

<sup>394</sup> *International Mechanical Code* § 401.5.

<sup>395</sup> Appendix 7-D-I.

<sup>396</sup> *International Mechanical Code*, § 501.3.

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The IBC also compares well with ARC and EPA guidelines regarding another identified asthma trigger: rodents. ARC and the EPA both require that all openings and joints shall be caulked, if possible, or sealed with corrosion proof materials (e.g. stainless steel mesh).<sup>397</sup> The International Plumbing Code (IPC) addresses this issue by requiring that all openings that have been made in walls for the passage of pipes shall “be closed and protected by the installation of approved metal collars that are securely fastened to the adjoining structure.”<sup>398</sup> Likewise, “[E]xterior openings into the attic space of any building...shall be covered with corrosion resistant wire cloth screening...that will prevent the entry of...rodents.”<sup>399</sup> While these requirements are noteworthy, they do not go far enough. For example, there is no requirement of rodent proofing a basement or foundation, the quickest point of entry for any rodent.

The IBC does contain a section called “Rodent Proofing” in Appendix F, which would address this deficiency and others; however, per the provisions of New Hampshire’s statute outlined above, the state has adopted only the body of the Code and not the Appendices. There is no practical reason why this Appendix should not be adopted by New Hampshire. A single clause change in NH ST § 155-A would go a long way in preventing the prevalence of rodents in homes, and the health problems that come with them.

One area where the IBC seemingly lacks sufficient standards is with regard to the prevention of moisture accumulation indoors. Although it does meet the flashing requirements suggested by ARC and the EPA, requiring flashing around all windows, exterior doors and even roofs, it completely lacks the requirement of having smooth, hard surfaces placed in all bathrooms.<sup>400</sup> While ARC mandates that no carpeting shall be placed in wet areas<sup>401</sup>, the IBC

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<sup>397</sup> Appendix 7-D-I.

<sup>398</sup> *International Plumbing Code*, § 304.4.

<sup>399</sup> *International Building Code*, § 1202.2.1.

<sup>400</sup> *Id.* at § 1503.2.

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explicitly states that, “*In other than dwelling units, toilet and bathing room floors shall have a smooth, hard, nonabsorbent surface.*”<sup>402</sup> The implications of this difference could be quite substantial in something like the construction of low-income housing. The cost of installing cheap carpet is substantially less than putting in a more expensive, tile or other non-absorbent material. Carpet in the bathroom could easily trap moisture and lead to mold and other asthma triggers. This is one clear area of the code where lobbying efforts could be focused to effect a change.

Another moisture-related area in which the IBC is deficient compared to ARC and EPA standards is in the quality and placement of the air ducts. Ducts that carry ventilated air, and especially steam, can create condensation. If these ducts are not protected against such condensation, the moisture can drip into surrounding building materials and cause a substantial collection of moisture. As a result, ARC and the EPA have both suggested provisions that would safeguard against this potentially harmful collection. While ARC has suggested that no air ducts be placed in attics<sup>403</sup> (thereby reducing the collection of moisture in the house), the EPA has suggested that if air handling equipment is placed in attics that it have a maximum air leakage of no more than 3 percent.<sup>404</sup> The IBC, however, does not prohibit any amount of air leakage and sets forth the following general guideline: “Provisions shall be made to prevent the formation of condensation on the exterior of any duct.”<sup>405</sup> This requirement is so broad that there is likely great variation among the contractors who do take the requirement seriously and attempt to guard against condensation around air ducts, and those who take advantage of the requirement’s general and lenient provisions.

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<sup>401</sup> Appendix 7-D-I.

<sup>402</sup> *International Building Code*, § 1209.1. (emphasis added).

<sup>403</sup> Appendix 7-D-I.

<sup>404</sup> *Id.*

<sup>405</sup> *International Mechanical Code*, § 603.11.

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## Code Enforcement

The IBC would be powerless without some mechanism for enforcement. At the state level, this power lies with the Fire Marshal.<sup>406</sup> Most municipalities, including both Concord and Nashua, have appointed Chief Building Officials as independent positions from the local fire marshal. Mike Santa, Chief Building Official of Nashua, is such an example. To enforce the provisions of the Code, the IBC mandates that a party wishing to build must first receive a permit from the proper authority.<sup>407</sup> According to Mr. Santa, inspections then come in phases. For example, the permit may require that an inspection of the foundation must occur before proceeding. During these multiple inspections, Mr. Santa admitted that, “[O]bviously, fire prevention and life safety (structural integrity) are the most important priorities of our inspections. If it’s in the Code, then we have no authority to waive it unless it can’t be done and there is an alternative way for reaching the same result.” Mr. Santa then added that his department strives for 100 percent compliance with the Code, although he could not guarantee that this was always the result.<sup>408</sup>

While the efforts of Nashua’s Building Department are commendable, there is a major flaw in the system in regards to existing housing. According to Mr. Santa, inspections cease for good once an occupant receives his Certificate of Occupancy.<sup>409</sup> This, in turn, leads to a situation in which only new buildings will ever be guaranteed to comply with the IBC. This difference may be substantial in that the IBC tends to be much more stringent than older codes. One example that Mr. Santa highlighted was ventilation requirements, which have gotten much

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<sup>406</sup> NH ST § 155-A:7 I.

<sup>407</sup> *International Building Code*, § 105.1.

<sup>408</sup> Int. Santa.

<sup>409</sup> *Id.*

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stricter since asthma and other allergies have gained more attention as a health problem.<sup>410</sup>

Compounding this issue is the fact that once a building or home has been in use for a certain amount of years, normal wear and tear will inevitably occur. These older houses are therefore not necessarily in compliance with the stringent IBC, although they may be exactly the homes where there is a real need for code enforcement to prevent health hazards.

### **Analysis**

Although the provisions of the IBC come close to meeting the standards established by ARC, there is still visible room for further improvement. The consequential disparities in the fields of rodent and moisture prevention are not insurmountable. Adding a few well-placed clauses to NH ST § 155-A in regards to rodent proofing and moisture prevention would go a long way towards meeting ARC and EPA standards. The difference that would result in these changes would easily outweigh any negligible cost these added provisions may bring.

While adding to the IBC would be a clear improvement, a major problem would still exist in Code enforcement in New Hampshire. This problem is the absence of any continuing procedure of inspection. As noted above, the IBC only governs the construction of new buildings, and inspections cease once the Building Official issues the Certificate of Occupancy. This leaves the plethora of older houses not accountable to the strict requirements of the much improved IBC.

Although it is true that some older houses are owned by upper-class residents, these houses are typically better constructed and, more importantly, have owners or residents who have the resources to address health-related problems. The same is not true for lower income residents, who may have little or no money to address these issues. Moreover, residents of all

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<sup>410</sup>Int. Santa.

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income levels who are not educated as to asthma triggers may not realize that their leaky ceiling is a potential health hazard, and thus may not allot whatever resources they have to fix it.

Thus, increased education as to asthma triggers and a system of inspections for older housing are both needed to address these problems. While this would require hiring more inspectors at an increased cost to taxpayers, taxpayers are already paying for the costs of asthma. The statistics show that Medicaid and Medicare covered 40 percent of the hospitalization charges in 2000.<sup>411</sup> Allocating more money to the building department now will hopefully save money in the long run. If the problem can be addressed before New Hampshire residents develop asthma or suffer asthma attacks, hundreds of thousands of dollars will be saved each year in asthma-induced, Medicare-sponsored trips to the hospital.

### **Sanitation Code**

#### **Overall state statutes**

New Hampshire state statutes do not include much specific language related to sanitation and housing conditions pertinent to asthma triggers. Unlike ARC and EPA guidelines which have very concrete provisions, the majority of state sanitary and housing statutes use broad language (see Appendix D-II). Thus, while the underlying concern or intent may be similar, the statutes look very different. For example, the ARC and EPA guidelines specify that housing shall be rodent-proofed with steel screens over any holes, and well ventilated with exterior exhausting fans; in contrast, the NH RSA 48 provides that:

An ordinance...shall provide that...a dwelling is unfit for human habitation if he finds that conditions exist in such dwelling which are unusually, abnormally, or unreasonably dangerous or injurious to the health or safety of the occupants of such dwelling, the occupants of neighboring dwellings or other residents of such municipality. Such conditions may include the following: Defects which increase beyond normal the hazards of fire, accident, or other calamities; lack of reasonable adequate ventilation, light, or sanitary facilities; dilapidation; disrepair, dangerous structural defects; uncleanliness;

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<sup>411</sup> *Id.*

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over-crowding; inadequate ingress and egress; inadequate drainage; or any violation of other health, fire or safety regulations.<sup>412</sup>

State statutes also lay out minimum standards which apply to landlords, stating that:

[No landlord shall maintain those rented premises in a condition in which:] “The premises are infested by insects and rodents where the landlord is not conducting a periodic inspection and eradication program; the roof or walls leak consistently; the floors, walls or ceilings contain substantial holes that seriously reduce their function or render them dangerous to the inhabitants.”<sup>413</sup>

The state statutes for housing standards are enforced by a public agency which may be designated by municipalities;<sup>414</sup> in the three municipalities examined in this report, the housing departments and public health departments enforced RSA 48-A.

In addition to housing statutes, statutes related to public environmental health may pertain to asthma triggers in housing. State statute 125.9 lays out the duties of the Department of Health and Human Services (“DHHS”), stating that the department shall: “Investigate complaints of poor indoor air quality and conduct inspections of buildings and dwellings, upon request, for the presence of radon or other health hazards present in indoor air.”<sup>415</sup> This state statute does not provide for enforcement of complaints, but rather requires that the department “provide education, technical consultation, and recommendation for abatement of such health hazards.”<sup>416</sup>

The statute states that DHHS shall be the lead agency to assess health risks; however, the statute also states that: “other state agencies shall cooperate fully...to accomplish such assessments available to the department of health and human services on a reasonable basis.”<sup>417</sup> Health hazards addressed by state statute 125 include environmental health hazards such as toxic air

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<sup>412</sup> N.H. Rev. Stat. Ann. § 48-A:7 (2003).

<sup>413</sup> *Id.* at § 48-A:14(I), (IV), (VI).

<sup>414</sup> *Id.* at § 48-A:3(I).

<sup>415</sup> *Id.* at § 125.9(X).

<sup>416</sup> *Id.*

<sup>417</sup> *Id.* at § 125-H:1.

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pollutants and radiological health concerns.<sup>418</sup> Although asthma triggers are not specifically addressed in this section, the statute could be construed to include asthma triggers as a health hazard.

In cases of extreme disrepair, state statute 155-B requires repair or demolition of any building that is hazardous to public safety or health due to “inadequate maintenance, dilapidation, physical damage, unsanitary condition, or abandonment.”<sup>419</sup> Asthma triggers, at their worst or in combination with serious other problems, may constitute a hazard to public health and may be remedied under RSA 155-B.

### Statutory Enforcement

In regards to the enforcement of these statutes, there is a working relationship between sanitary inspectors and environmental health inspectors. This relationship is referenced in New Hampshire statutes, and interviews with both health inspectors and sanitary inspectors confirmed that a relationship exists between departments.<sup>420</sup> Statute 130, governing the activities of sanitary inspectors, states “inspectors shall, under the direction of [DHHS], investigate local sanitary conditions, in conjunction with and upon request of local boards of health, in cases where such expert advice is deemed necessary by the [DHHS].”<sup>421</sup> Furthermore, 130:5 states that “inspectors shall perform such other duties in connection with public health matters as [DHHS] shall direct.”

The housing standards laid out in state statute 48-A may be enforced in two ways. A petition filed by at least ten residents of the municipality that any dwelling is unfit for human habitation will be investigated; alternatively, a public agency may find by inspection that any

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<sup>418</sup> See *Id.* at § 125-I, 125-F.

<sup>419</sup> *Id.* at § 155-B:1(II).

<sup>420</sup> Telephone interview with inspector in Berlin, NH. (Feb. 25, 2004); telephone interview with inspector in Manchester, NH. (Feb. 26, 2004); telephone interview with inspector in Nashua, NH. (Feb. 27, 2004).

<sup>421</sup> *Id.* at § 130:4.

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dwelling is unfit for human habitation.<sup>422</sup> If either source of investigation indicates that there is a basis for such charges, a complaint stating the charges is issued to the owner and a hearing is scheduled.<sup>423</sup> If the dwelling is found unfit at the hearing, an order shall be issued to repair, alter, or improve the dwelling within a specified time period, or to demolish the dwelling if costs to repair are unreasonable.<sup>424</sup> If the owner does not comply with the order, the public agency may file a petition in superior court, notice shall be given to the owner, and another hearing held.<sup>425</sup>

There are many obstacles to enforcement of the New Hampshire state housing standards. Complaints filed by residents can only be generated when residents are aware of what constitutes adequate housing conditions. This understanding may be particularly elusive in the case of asthma triggers, where, for example, chronic moisture inside walls may not be apparent to a resident. In addition, certain groups of residents may be unlikely to file complaints; for example residents who are unfamiliar with our system of government, who have limited English language skills, or who have limited alternative housing options either may not know about the complaint process or may fear its results.

Public health provisions (chapter 125) are enforced by both state commissioners of DHHS and local officers.<sup>426</sup> The commissioner of DHHS has the authority to make rules “for requesting and conducting inspections pursuant to RSA 125:9, X, and the provision of technical consultation and recommendations that may result from such inspections.”<sup>427</sup> Town health officers may pass regulations to prevent and remove public nuisances.<sup>428</sup> Public health code enforcement is often for public nuisances, such as exposed sewage, and is less frequently used to

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<sup>422</sup> *Id.* at § 48-A:3(II).

<sup>423</sup> *Id.*

<sup>424</sup> *Id.* at § 48-A:3(III).

<sup>425</sup> *Id.* at § 48-A:4.

<sup>426</sup> *Id.* at § 147:2.

<sup>427</sup> *Id.* at § 125:15-a(VI).

<sup>428</sup> *Id.* at § 147:1(I).

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enforce public health violations on private residential property.<sup>429</sup> Many public health violations related to asthma are not of the visible nature that would initiate an inspection by a health officer.

An additional challenge to enforcement is that the existence of multiple codes at multiple levels of government may lead to confusion among residents regarding where to report violations, and among inspectors as to who ultimately must handle complaints.<sup>430</sup> The New Hampshire Bar Association recently published a report describing enforcement procedures in detail<sup>431</sup>; presumably this publication was in response to challenges faced in enforcing New Hampshire state and local statutes.

### Legislative Intent

There are sections of the public health code which may apply to asthma, although they do not explicitly refer to asthma. These may be important avenues whereby stakeholders in New Hampshire could pursue legislative remedies to address asthma triggers. The general provision governing DHHS states that DHHS will:

Make investigations and inquiries concerning the causes of epidemics and other diseases, the sources of morbidity and mortality, and the effects of localities, employments, conditions, circumstances, and the environment on the public health.<sup>432</sup>

Additionally, this provision provides for the establishment of a council for children and adolescents with chronic health conditions.<sup>433</sup> The council may establish such standing committees, ad hoc committees, or task forces as it deems appropriate to carry out the mission of the council.<sup>434</sup> Duties of the council include:

...assessment of the needs of children and adolescents with chronic health conditions...

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<sup>429</sup> Interview Manchester Inspector.

<sup>430</sup> N.H. Bar Assoc. *Guide to District Court Enforcement of Local Ordinances and Codes*. (2001).

<sup>431</sup> *Id.*

<sup>432</sup> N.H. Rev. Stat. Ann. at § 125:9(II).

<sup>433</sup> *Id.* at § 126-J:1(I).

<sup>434</sup> *Id.* at § 126-J:2.

<sup>435</sup> *Id.* at § 126-J:2(I).

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Collaborate with [DHHS], the department of education, and other public and private organizations statewide to enhance community-based family supports that meet the unique needs of children and adolescents with chronic health conditions and their families.<sup>436</sup>

Another similar section provides for a Wellness and Primary Prevention Council, which includes both health promotion and illness and injury prevention.<sup>437</sup> Section 132 of the statute allows the DHHS to ‘protect and promote the physical health of women in their child-bearing years and their infants and children.’ Another statute provides for the “establishment of activities for the prevention, assessment, and control of chronic diseases which may be attributed to the environment, individual lifestyle, or the workplace.”<sup>438</sup> The Asthma Control Program in New Hampshire cites this particular statute. All of these statutes show that the legislative intent in establishing DHHS was to address issues pertaining to the public health. If New Hampshire residents and political representatives come to understand asthma as the severe and chronic health threat that it is, such statutes could be very useful in demanding that DHHS address the asthma treatment and prevention.

There was a state statute which dealt with the treatment of asthma and related chronic lung disease; unfortunately, that statute was repealed in 1986.<sup>439</sup> Research into the legislative history of the statute is outside of the scope of the project as it would entail visiting the New Hampshire Law Library in Concord. However, for future work examining potential legislative actions regarding asthma, it may be worthwhile to have a record of past legislative changes and discussions to better understand the political climate of New Hampshire.

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<sup>436</sup> *Id.* at § 126-J:2(III).

<sup>437</sup> *Id.* at § 126-M:2(I)(p),(q).

<sup>438</sup> *Id.* at § 141-B:2.

<sup>439</sup> N.H. Rev. Stat. Ann. at § 137-B.

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## Landlord-Tenant Law

Landlord-tenant law provides another area through which housing conditions could be improved for asthma sufferers. RSA 540 states the general prohibition that “No landlord shall willfully violate a tenant’s right to quiet enjoyment of his tenancy.”<sup>440</sup> An examination of case law shows that this right of quiet enjoyment and the common law warranty of habitability are two doctrines by which tenants have asserted their rights to live in clean and safe conditions. Although there have been no cases in New Hampshire which specifically address asthma in terms of housing, some cases can be analogized to issues related to asthma. In the 1971 case, *Kline v. Burns*, the Supreme Court of New Hampshire held that an implied warranty of habitability is included in landlord-tenant leases.<sup>441</sup> *Kline* held that a warranty of habitability existed as a matter of public policy,<sup>442</sup> marking a change from previous common law which stated that there was no implied warranty of habitability, that landlords were limited in their duty to not deceive tenants, and that landlords were not under duty to repair premises unless such a duty is expressly stated in the lease.<sup>443</sup> In contrast to that common law, the New Hampshire Supreme Court in *Kline* stated that in enacting statute 48-A, the legislature recognized “that the public welfare requires that dwellings offered for rental be at the beginning, and continue during the tenancy to be, in a safe condition and fit for human habitation.”<sup>444</sup>

Although no cases indicate that asthma triggers would constitute a breach of that warranty of habitability, the New Hampshire Supreme Court states that “courts have a duty to reappraise old doctrines in the light of the facts and values of contemporary life.”<sup>445</sup> As medical

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<sup>440</sup> *Id.* at § 540-A:2.

<sup>441</sup> *Kline v. Burns* 111 N.H. 87 (N.H. 1971).

<sup>442</sup> *Id.* at 93.

<sup>443</sup> *Id.* at 89-90.

<sup>444</sup> *Id.* at 92.

<sup>445</sup> *Id.* at 91.

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professionals continue to learn more about asthma, it may be that conditions such as chronic mold or moisture may be considered a breach of the implied warranty of habitability. Analogous trends in litigation such as lead paint cases have served as effective remedies for tenants in the past. The New Hampshire Supreme Court also held that the breach of the warranty of habitability is a question of fact to be determined on a case-by-case basis.<sup>446</sup> In cases of severe asthma triggered by housing conditions, individual litigants may bring successful claims that their homes are not habitable. Unfortunately, given the realities of tight rental markets and the costs of litigation, it may be difficult for an individual to bring such a case, even if housing conditions are uninhabitable.

In determining what constitutes a breach of the warranty of habitability, there is not a great deal of New Hampshire case law. A relatively recent case held that the implied warranty did not require landlords to protect tenants from criminal attacks, but rather, referred to structural defects, fire hazards, and unsanitary conditions.<sup>447</sup>

The court noted that allegations made in another recent case, *Crowley v. Frazier*, might have constituted a breach of the warranty of habitability; however, in *Crowley* tenants brought a claim under 540-A for a breach of the covenant of quiet enjoyment.<sup>448</sup> Tenants alleged that rodent infestation, plumbing problems, electrical problems, a residual garbage problem, loose and falling ceiling plaster, leaking roofs and walls, and structural problems violated their right to quiet enjoyment.<sup>449</sup> The court denied the tenants any remedy under 540-A, holding that claims to quiet enjoyment relate to interference with actual possession of premises or interference with the tenant's beneficial use of premises such as interruption of heat or interference with business

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<sup>446</sup> *Id.* at 93.

<sup>447</sup> *Walls v. Oxford Management Co., Inc.* 137 N.H. 660, 653 (N.H. 1993).

<sup>448</sup> *Crowley v. Frazier*, 147 N.H. 387 (N.H. 2001).

<sup>449</sup> *Id.* at 388.

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activities.<sup>450</sup> The court noted that since 540-A:4 listed the covenant of quiet enjoyment and the warranty of habitability as separate claims, that the tenants in this case might have successfully brought a claim under the warranty of habitability.<sup>451</sup>

The limited case law on point may indicate that landlord-tenant law has not been an effective avenue through which to address housing conditions related to asthma; however, further research on this issue might prove useful. Practicing lawyers in the field may have a sense of the direction the law is going in, and whether housing issues related to asthma are likely to be addressed by the New Hampshire courts in the future.

### **Municipality Analysis and Comparison to ARC/EPA Guidelines**

State sanitation law and landlord tenant law discussed thus far is supplemented by local health ordinances enacted at the municipal level. State statute 48-A:2 grants power to municipalities to enact local ordinances. Municipalities adopting ordinances are exempt from provisions in conflict with their adopted ordinance<sup>452</sup>, but “whenever the regulations made under the authority hereof differ from those prescribed by any statute, ordinance or other regulation, that provision which imposes the higher standard shall govern.”<sup>453</sup> Perhaps for this reason, the municipal codes tend to be more specific and more stringent than the state statutes.

ARC/EPA guidelines provide extensive standards for keeping structures dry and clean. Manchester and Nashua have many similar sections which address structural issues related to moisture. Both municipal ordinances specifically address plumbing fixtures, requiring that fixtures be properly installed and be kept free from defects or leaks in order to properly

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<sup>450</sup> *Id.* at 390.

<sup>451</sup> *Id.* at 391.

<sup>452</sup> N.H. Rev. Stat. Ann at § 48-A:2 (2003).

<sup>453</sup> *Id.* at § 48-A:13.

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function.<sup>454</sup> ARC guidelines specify that no plumbing should be in interior walls; EPA guidelines specify that plumbing be sealed with caulk. Both codes state that basements shall be free from dampness<sup>455</sup>, but again do not specify how dampness be prevented as is done in the guidelines.

Nashua's Code is the most extensive of the codes examined and has four additional relevant sections beyond what Manchester addresses. Nashua specifies that "every window sash be structurally sound...so as to prevent outside elements from passing through."<sup>456</sup> This may partially address the ARC/EPA specifications to pan flash all windows and exterior doors. A second relevant provision is that Nashua's code mandates that clothes dryers exhaust to the outside.<sup>457</sup> This is not as stringent as the EPA guidelines however, which also specify that furnaces and water heaters must also vent outside and must be sealed. Nashua's Code states that bathroom and kitchen floors be "substantially impervious to water" in order to be kept clean and sanitary.<sup>458</sup> Similarly, the ARC and EPA guidelines specify that no carpets shall be installed in kitchens, bathrooms, and utility rooms. Again, the guidelines go further than the existing municipal codes and specify that surfaces in other living areas shall be smooth and cleanable (using vinyl, wood, tile, etc.).

Manchester's Code specifies that interior surfaces be clean, but describes that condition as "free of peeling paint, cracked or loose plaster, decayed wood, or other defective conditions."<sup>459</sup> This may be different from the definition of "clean" envisioned by ARC or the EPA. Moreover, while Manchester prohibits structural decay, it does not include the rigid

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<sup>454</sup> Manchester Code Ordin. at §150.084; Nashua Code Ordin. at § 11-108(h).

<sup>455</sup> *Id.* at § 150.048; *Id.* at 11-76(2).

<sup>456</sup> Nashua Code Ordin. at § 11-61(14).

<sup>457</sup> *Id.* at § 11-110(B).

<sup>458</sup> *Id.* at § 11-76(10).

<sup>459</sup> Manchester Code Ordin. at § 150.050.

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building standards through which ARC and the EPA attempt to prevent such decay. Both the Manchester and Nashua Codes address roof drainage, although in a very limited manner relative to the ARC and EPA guidelines. Nashua's Code states "roof drainage shall be adequate to prevent rainwater from causing dampness to the walls or interior portion of the building."<sup>460</sup> Manchester has a quite similar provision, but uses the term "wet"<sup>461</sup> rather than dampness, perhaps indicating a more lenient standard. In contrast, the guidelines specify an appropriate system of roof drainage.

There are many other moisture-related aspects of the ARC and EPA guidelines which are not addressed by any state or municipal sanitary statutes. Many of these are those guidelines relevant to construction; for example, specifications about exterior finishing, insulation, and foundations. Clearly, the municipal sanitary ordinances governing existing structures do not adequately address moisture. Sanitary statutes could be expanded to include more checks to make sure that moisture is adequately controlled in existing buildings. While moisture control is a priority for ARC/EPA, the codes examined suggest that this priority is not shared in New Hampshire.

ARC/EPA guidelines also extensively address ventilation standards. In New Hampshire state statutes, lack of adequate ventilation is listed as one condition which may cause a dwelling to be unfit for human habitation.<sup>462</sup> Another statute requires public health officials to investigate complaints of poor indoor air quality.<sup>463</sup> Beyond those two applicable state statutes, there are no sections of Nashua's code which specifically address ventilation.<sup>464</sup> These state statutes do not

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<sup>460</sup> Nashua Code Ordin. at § 11-61(4).

<sup>461</sup> Manchester Code Ordin. at §150.039.

<sup>462</sup> *Id.* at § 48-A:7.

<sup>463</sup> *Id.* at § 125:9(X).

<sup>464</sup> Despite the lack of ventilation requirements in Nashua's code, the interviewee noted that ventilation as related to carbon monoxide poisoning was one of her top concerns. (Interview with Nashua Inspector.) This may be an area where the code does not adequately reflect what is happening on the ground in Nashua.

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begin to address ventilation to the length that ARC/EPA Guidelines lay out, and these minimal statutes are the standards governing ventilation in Nashua, Berlin, and presumably many other municipalities. Manchester lays out more explicit standards, requiring that:

every habitable room shall have a window or windows with a total sash area equal to 1/10 of its floor area opening on a street, alley, yard, or court open to the sky; ...constructed that at least the top half of the sash area can be opened, except that an approved method of mechanical ventilation may be substituted therefore.”<sup>465</sup>

Manchester also specifies that every bathroom have a window or be mechanically ventilated, producing a change of air every twelve minutes.<sup>466</sup> While Manchester’s Codes do address all habitable rooms, Manchester’s standard of a functional window does not meet the ventilation standard set out in the guidelines, which specifies that exhausting fans be installed in all bathrooms and kitchens. The guidelines also specify ventilation standards for ductwork, attics, and fireplaces, all of which are absent from state and municipal codes.

ARC/EPA guidelines explicitly describe structural conditions to keep homes free from pests. The New Hampshire state and municipal codes all have a general statement to the effect that structures shall be kept free from infestation, that extermination is required in the event of an infestation, and that after extermination, precautions must be taken to prevent a reinfestation.<sup>467</sup> However, only Manchester’s code describes in any detail how to prevent infestations stating, “Every hatchway, bulkhead, and exitway shall be so constructed and maintained as to prevent the entrance of rodents...”<sup>468</sup> and “every window... shall be supplied with insect screens.”<sup>469</sup> Even this does not reach the level of detail described in ARC/EPA guidelines, which state, for example, “Seal utility openings and joints...use corrosion proof materials (e.g., copper and stainless steel

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<sup>465</sup> Manchester Code Ordin. at § 150.020(A).

<sup>466</sup> *Id.* at § 150.020(B).

<sup>467</sup> See N.H. Rev. Stat. Ann. At §48-A:14(I), Manchester Code Ordin. at § 150.067, Nashua Code Ordin. at § 11-76(12).

<sup>468</sup> Manchester Code Ordin. at § 150.042.

<sup>469</sup> *Id.* at §150.045.

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mesh).” The New Hampshire state statute and the Nashua Code have no preventive language. Nashua’s Code seems only to require rodentproofing after infestation has occurred, stating “in the case of a rodent infestation the structure must be rodentproofed.”<sup>470</sup>

The state and municipal codes are not nearly as extensive as the guidelines laid out by ARC and the EPA. However, the three principal asthma triggers are all addressed in some form in all ordinances. Codes enacted at the municipal level are much more specific than the state statutes. Nashua’s Code addresses moisture more extensively, while Manchester addresses ventilation and rodentproofing more extensively.

In comparing sanitation codes across municipalities, perhaps the most significant difference between housing standards is the discrepant enforcement of codes related to an office’s capacity to handle complaints. In Berlin, one housing inspector handles all complaints. However, Berlin is a small city (as an indication of potential volume of work, there are 5,111 housing units in Berlin<sup>471</sup>), and the inspector felt able to keep up with the volume of calls. In contrast, in Nashua there are 35,897 housing units and in Manchester there are 45,892 housing units.<sup>472</sup> Nashua’s staff of three inspectors is not able to keep up with complaints as well as the town of Berlin.<sup>473</sup> The city of Manchester employs six housing inspectors, one zoning inspector, five structural inspectors, and seven staff members in the Department of Environmental Health.<sup>474</sup> With this increased staff, Manchester has been able to institute a process of cyclical inspections; however, during an interview, a Manchester inspector noted that they were still not up-to-date in their inspections and that they would do a more thorough job if they had more staff.

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<sup>470</sup> Nashua Code Ordin. at §11-76(12).

<sup>471</sup> U.S Census Bureau. *Census 2000 Housing Units*, <http://quickfacts.census.gov/hunits/states/33pl.html> (accessed Feb. 1, 2004).

<sup>472</sup> U.S Census Bureau. *Census 2000 Housing Units*, <http://quickfacts.census.gov/hunits/states/33pl.html> (accessed Feb. 1, 2004).

<sup>473</sup> Interview with Nashua Inspector.

<sup>474</sup> [www.manchesternh.gov/CityGov/BLD/inspection.htm](http://www.manchesternh.gov/CityGov/BLD/inspection.htm) (accessed Feb 1, 2004).

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## **Field Research**

Interviews with inspectors provide an important source of information since the enforcement of the codes is affected by many factors not contained in the codes, such as the inspection office, the inspectors, and the location of work. Interviews are described to order to provide a sense of how inspections work on the ground in three areas of New Hampshire. Further research would provide greater information from which to draw conclusions about the sanitary inspections.

## **Berlin**

Berlin primarily relies on New Hampshire state statutes. Although some local codes exist, we were not able to obtain those codes for this project. Housing inspectors in Berlin typically receive one or two calls per week related to a housing complaint.<sup>475</sup> About half of the complaints are from tenants living in apartments, and the other half are from neighbors concerned about some more publicly visible problem (e.g. garbage outside, dilapidated buildings). A very small percentage of complaints are from public agencies such as social service agencies.

Of the complaints received, warnings are issued first in about 20 percent of complaints and violations are ultimately issued in about two-thirds of complaints. In enforcing complaints, the housing inspectors primarily rely on 155-B, citing hazardous conditions, or 147, citing public nuisance. Complaints are generated in all types of housing (e.g., multifamily, single family). The interviewee did note that more complaints were generated from tenants in one area of town consisting of older housing stock owned primarily by out-of-town landlords.

Of a list of seven concerns related to housing safety, an interviewee identified the top two concerns as pest management, and ventilation and air quality. Mold was noted as an additional concern that was not on the list. Although the interviewee has not had any asthma related

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<sup>475</sup> Interview with Berlin Inspector.

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training and has no personal experience with asthma, the interviewee was aware of the relationship between moisture and asthma. However, the interviewee was not aware of the relationship between pest infestations and asthma.

### **Manchester**

Manchester enacted a local housing ordinance in 1991, a slightly modified version of the 1971 BOCA Code. BOCA was modified to include weather-related concerns particular to Manchester.<sup>476</sup> Manchester's ordinance is applied only to rental housing. Housing inspectors in Manchester inspect all residential apartments once every three years, and this constitutes the majority of their work. Tenant complaints outside of these routine inspections do exist, but are much less frequent than the routine inspections. Complaints are typically made by lower-income individuals.

In inspections, the housing inspectors primarily enforce obvious safety concerns. Primary concerns noted were egress, structural safety, electricity, functioning windows, and proper heating. Regarding air quality concerns, the interviewee compared their standard to a minimum passing grade in school, explaining that "if we walk in and breathe the air, then we assume that it is healthy." Complaints are generated in all types of housing (e.g. multifamily, single family), but more complaints were generated from tenants in the central city area consisting of older housing stock.

Of a list of 7 concerns related to housing safety, an interviewee identified the top concerns as fire safety, pest management, ventilation, and durability against moisture, but stressed that safety concerns took precedence over the 7 concerns listed. The interviewee has not had any asthma related training, has no personal experience with asthma, and was not aware of the relationship between moisture and asthma, nor pest infestations and asthma. In discussing

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<sup>476</sup> Interview with Manchester Inspector.

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concerns about housing and sanitation, the interviewee expressed a concern that lifestyle choices, for example food preparation habits, might significantly contribute to sanitation problems.

Since the Manchester ordinance is applied to rental property, another set of ordinances governs public housing and section 8 housing. In further examination of asthma and housing, it will be critical to include analysis of standards affecting residents of federal housing and section 8 housing.

### **Nashua**

Nashua enacted a local housing ordinance in 1990, based on BOCA. There is discussion to adopt 2003 International Property Maintenance Code.<sup>477</sup> Nashua's ordinance is applied primarily to rental housing, but it can apply to private housing when private housing constitutes a public nuisance (e.g., dilapidated housing). Inspectors respond to tenants' concerns after a complaint is in writing, and there is an extensive process of documentation, notice, and follow-up including the inspector, the tenant, and the landlord. In Nashua there are two inspectors in the field and one attorney in the office. The attorney handles prosecutions when there is a violation. The interviewee reported that since their complaint and warning process is so thorough, most issues do not reach a prosecution stage; however, there are usually about two to four prosecutions annually.

The Nashua housing inspection office is quite busy, with three staff members handling housing issues for 15,000 rental units. The office is considering implementing a cyclical inspection process similar to Manchester; however, resources do not allow for that presently.

In conducting inspections, the Nashua staff primarily enforces obvious safety concerns, noting that top concerns of a list of 7 were ventilation as related to carbon monoxide poisoning, durability against moisture as related to risks of electric shorts and fires, and pests. The majority

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<sup>477</sup> Interview with Nashua Inspector.

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of complaints from tenants are heat-related concerns. The interviewee has not had any asthma related training and has no personal experience with asthma, but was aware of the relationships between moisture, pest infestations and asthma.

### **New Hampshire Conclusion**

In New Hampshire, building codes match more closely to ARC and EPA guidelines than do sanitation codes. Consequently, new buildings may more effectively prevent asthma triggers than older buildings. The building codes effectively address ventilation, but only minimally address pests and moisture prevention standards. Sanitation codes do address ventilation, pests, and moisture, but not nearly to the extent of the proposed ARC and EPA guidelines.

Furthermore, sanitation codes are primarily enforced in apartments as opposed to owner occupied residences. In addition, a large number of New Hampshire residents live in older residences built prior to reforms in building codes. As those new buildings age, inadequate sanitation standards and non-enforcement of standards will allow many of those buildings to fall into disrepair. Given the one-shot nature of building code enforcement, and the limited scope and enforcement of sanitation codes, there are many residences in New Hampshire which are held to quite minimal housing standards. Thus, under the current New Hampshire system, it seems almost inevitable that low income residents of New Hampshire will disproportionately live in older housing or dilapidated housing and thus be more likely to face greater exposure to asthma triggers and related problems.

## **VI. RHODE ISLAND**

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## I. Introduction

### A. Rhode Island and Asthma Awareness

In 1999, the Rhode Island Department of Health created the Rhode Island Asthma Control Program.<sup>478</sup> The community partners include the American Lung Association of Rhode Island (ALARI), health care providers and community organizations.<sup>479</sup> The project has been funded by the Center for Disease Control since September of 1999.<sup>480</sup> In addition, Rhode Island has established the State of Rhode Island Asthma Control Plan, 2002-2007, available online.<sup>481</sup> In an interview on March 15, 2004, with the Asthma Control Plan's Project Manager, the interviewer found that the time frame for the project has changed to 2003-2008. The Project Manager said that the six core cities participating in the plan are Providence, Warwick, Newport, Pawtucket, Central Falls, and Woonsocket. These cities were chosen due to prevalence of asthma and the presence of the plan's target populations of African Americans and Latinos.<sup>482</sup> The Project Manager said that in the last fifty years, environmental conditions for African Americans (substandard housing, substandard health care, poor access to health care, and living predominantly in inner cities) have not changed, though asthma rates among this group have gone up. Therefore, Rhode Island's Asthma Plan is not focused on how to prevent asthma but on how to prevent asthma emergencies.

The Asthma Control Group is aware of the multiple asthma triggers but has chosen to focus on implementing a mold standard in the inspection process. The Project Manager said that

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<sup>478</sup> Source: Rhode Island Department of Health, <http://www.health.ri.gov/disease/asthma/home.htm> (Accessed March 21, 2004).

<sup>479</sup> *Id.*

<sup>480</sup> Source: Center for Disease Control, <http://www.cdc.gov/nceh/airpollution/asthma/contacts/ri.htm> (Accessed March 21, 2004).

<sup>481</sup> Source: Rhode Island Department of Health, <http://www.health.ri.gov/disease/asthma/home.htm> (Accessed March 21, 2004).

<sup>482</sup> The Asthma Control Plan's Project Manager has worked with ARC and indicated in the interview that these also were ARC's target populations.

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in choosing this trigger, the committee asked the question: what causes can we identify which lend themselves to intervention? Generally, the project manager said the group has chosen to focus on educating insurers, persons with asthma, health care providers, and school personnel on how to control asthma so that there is never an emergency situation. Education will be done through health care and community groups.

### **B. Rhode Island State Demographics**

To better understand the context of housing and asthma in Rhode Island, it is instructive to explore the demographic structure of the state. Rhode Island has a land area of 1,045 square miles with a population density of 1,003.2 persons per square mile according to the 2000 Census.<sup>483</sup> The population of the state of Rhode Island in 2000 was 1,048,319<sup>484</sup>.

In terms of race, Rhode Island consists of a majority White population. Of those who only reported one race, the racial/ethnic groups in the state of Rhode Island in 2000 were: 85 percent White; 4.5 percent Black or African American; 0.5 percent American Indian and Alaskan Native; 2.3 percent Asian; 0.1percent Native Hawaiian and Other Pacific Islander.<sup>485</sup> According to the Census Bureau, Hispanics may be of any race and are therefore included in the applicable racial categories.<sup>486</sup> In 2000, 8.7 percent of the population of Rhode Island was Hispanic or Latino and 81.9 percent was White, not of Hispanic/Latino origin.<sup>487</sup>

### **C. Housing in Rhode Island**

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<sup>483</sup> Source: U.S. Census Bureau, *State and County QuickFacts Rhode Island*, <http://quickfacts.census.gov/qfd/states/44000.html> (accessed February 23, 2004)

<sup>484</sup> *Id.*

<sup>485</sup> *Id.*

<sup>486</sup> *Id.*

<sup>487</sup> *Id.*

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In 2000, the homeownership rate in Rhode Island was 60 percent and 41.2 percent of housing units were in multi-unit structures.<sup>488</sup> There was an average of 2.47 persons per household.<sup>489</sup> There were 2,596 housing units authorized by building permits in 2000.<sup>490</sup> Rhode Island, however, is facing a housing crisis.<sup>491</sup>

The need for affordable housing in Rhode Island is great, but according to the Rhode Island Statewide Housing Action Coalition (SHAC), low vacancy rates and a shortage of existing housing units contribute to Rhode Island's housing crisis.<sup>492</sup> According to SHAC, it is estimated that for Rhode Island's 162,960 low and moderate-income households, there are only 34,913 affordable units.<sup>493</sup> By chosen municipality for this project, the 2000 rental vacancy rates for Newport at 6.7 percent and Providence at 6.1 percent are above the state average of 5.0 percent, while Warwick at 3.9 percent is below the state average.<sup>494</sup>

One factor that may contribute to the shortage of affordable homes is that the cost of building such homes is a "marginal business at best."<sup>495</sup> If profit limits the building of affordable housing for low-income persons, it may also result in a substantial decrease in the preservation of existing affordable units. In the next 5 years, 7,000 rental units across Rhode Island have affordability contracts that will expire.<sup>496</sup> Funding is also in short supply for the routine

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<sup>488</sup> Source: U.S. Census Bureau, *State and County QuickFacts Rhode Island*, <http://quickfacts.census.gov/qfd/states/44000.html> (Accessed February 23, 2004)

<sup>489</sup> *Id.*

<sup>490</sup> *Id.*

<sup>491</sup> Source: Statewide Housing Action Coalition, *Rhode Island is facing a Housing Crisis*, <http://www.shac-ri.org/2003%20Full%20Platform.htm> (Accessed March 7, 2004)

<sup>492</sup> Source: Statewide Housing Action Coalition, *Rhode Island is facing a Housing Crisis*, <http://www.shac-ri.org/2003%20Full%20Platform.htm> (Accessed March 7, 2004)

<sup>493</sup> *Id.*

<sup>494</sup> Source: Rhode Island Department of Administration: Statewide Planning Program, *Part Two: Rhode Island Populations "At Risk"*, <http://www.planning.state.ri.us/housing/hdbpdf/pt2.pdf> (Accessed March 7, 2004).

<sup>495</sup> *Id.*

<sup>496</sup> *Id.*

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maintenance and repair of these units.<sup>497</sup> These factors contribute to not only a shortage of affordable housing for low-income persons, but also a shortage of decent housing.

The question that presents itself is: what impact does the housing shortage and the lack of funding for the maintenance and repair of low-income housing units have on its residence in terms of asthma? Although the Rhode Island State Building Code is more specific in its description of the specifications for new building construction and renovation than the ARC and EPA guidelines, issues of funding for the creation and maintenance of affordable housing units may undermine the purpose and specifications of the State Building Code.

### **II. Building Code**

#### **A. Rhode Island State Structure**

The Rhode Island Legislature established a State Building Code Standards Committee (Committee) that adopts and administers a State Building Code (Code).<sup>498</sup> The Committee consists of 25 members, one of whom is a public health official.<sup>499</sup> Within the Committee, there is a state housing and property maintenance code subcommittee that consists of nine members.<sup>500</sup> In accordance with its rule making authority of Title 23, Chapter 23-27.3, Section 109.1, paragraph 1 through 4 inclusive, the Committee has adopted and promulgated as the Rhode Island Basic Building Code the provisions of the BOCA National Building Code 1996 Edition (BOCA 1996), which is published by the Building Officials and Code Administrators International, Inc. (BOCA).<sup>501</sup> The provisions of BOCA 1996 and existing State Building Code with amendments set forth to the articles and sections of BOCA 1996 make up the Rhode Island

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<sup>497</sup> *Id.*

<sup>498</sup> R.I. Gen. Laws §23-27.3-100.1.3 (2002).

<sup>499</sup> R.I. Gen. Laws §23-27.3-100.1.4.

<sup>500</sup> *Id.*

<sup>501</sup> Source: Rhode Island Office of the Secretary of the State, Rhode Island State Building Code, Regulation SBC-1, [http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA\\_779\\_.pdf](http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA_779_.pdf) (Accessed February 18, 2004).

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State Building Code.<sup>502</sup> The administration and enforcement of the Code is subject to the provisions of Title 23, Chapter 27.3 of the General Laws of Rhode Island, rather than BOCA Chapter 1.<sup>503</sup>

The Code may be, and is, promulgated in several sections that are consistent with recognized and accepted standards adopted by national model code organizations and recognized authorities.<sup>504</sup> In addition to the State Building Code, three other regulations promulgated by the committee are relevant to the ARC and EPA guidelines: Regulation SBC-3 (2002), or the state plumbing code, Regulation SBC-4 (2002), or the state mechanical code, and Regulation SBC-8 (2002), or the state energy code.<sup>505</sup> The Committee adopted the provisions of the International Plumbing Code (IPC) 2000 edition (published by the International Code Council, Inc.) as the Rhode Island Plumbing Code.<sup>506</sup> As with the Code, the Plumbing Code also consists of amendments to the IPC 2000.<sup>507</sup> Similarly, the Committee adopted the provisions of the International Mechanical Code (IMC) 2000 edition (published by the International Code Council, Inc.) as the Rhode Island Mechanical Code together with amendments to the chapters and sections of the IMC 2000.<sup>508</sup> Lastly, the Committee adopted provisions of the International Energy Conservation Code (IEC) 2000 edition (also published by the International Code Council, Inc.) as the Rhode Island State Energy Code together with amendments to the chapters and sections of the IEC 2000.<sup>509</sup>

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<sup>502</sup> *Id.*

<sup>503</sup> *Id.*

<sup>504</sup> R.I. Gen. Laws §23-27.3-100.1.5.

<sup>505</sup> *Id.*

<sup>506</sup> Source: Rhode Island Office of the Secretary of the State, Rhode Island State Building Code Plumbing Code SBC-3, [http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA\\_2091\\_.pdf](http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA_2091_.pdf) (Accessed February 18, 2004).

<sup>507</sup> *Id.*

<sup>508</sup> Source: Rhode Island Office of the Secretary of the State, Rhode Island State Building Code, Mechanical Code SBC-4, [http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA\\_2093\\_.pdf](http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA_2093_.pdf) (Accessed February 18, 2004).

<sup>509</sup> Source: Rhode Island Office of the Secretary of the State, Rhode Island State Building Code, State Energy Code SBC-8 [http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA\\_2092\\_.pdf](http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA_2092_.pdf) (Accessed February 18, 2004).

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The Code covers the construction, reconstruction, alteration, repair, demolition, removal and inspection of new buildings and the rehabilitation and maintenance of existing buildings.<sup>510</sup> In addition to commercial buildings, the Code covers multiple family dwellings such as apartment buildings and dormitories.<sup>511</sup> One and two-family dwellings are covered by Regulation SBC-2, which uses the 2000 International Residential Code that is published by the International Code Council, Inc. and relevant amendments to its chapters and sections.<sup>512</sup> The purpose of the Code is to establish adequate and uniform regulations governing the construction and alteration of buildings and structures within the state.<sup>513</sup> While cities and towns do not have the authority to enact their own building codes, the towns and cities of Rhode Island do have Minimum Housing and Occupancy Standards pursuant to Title 45 § 45-24.3 et seq. that are codified in local ordinances.<sup>514</sup> However,

“matters governed by and conforming to the provisions of the State Building Code (§ 23-27.3-100.0 et seq.) shall prevail for all structures, dwellings, and dwelling units constructed, altered or repaired since July 1, 1977, providing the structure, dwelling or dwelling units conform in their entirety to the prevailing edition of the building codes in effect at the time of construction or occupancy, as evidenced by the date of issuance of a building permit issuance or date of issuance of a certificate of occupancy.”<sup>515</sup>

The purpose of the minimum housing standards is to protect the public health, safety, and welfare by governing utilities and facilities and other physical things and conditions essential to make dwellings safe, sanitary, and fit for human habitation.<sup>516</sup> Rhode Island does not have a

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<sup>510</sup> R.I. Gen. Laws §23-27.3-100.1.

<sup>511</sup> R.I. Gen. Laws §23-27.3-100.1.5.

<sup>512</sup> Source: Rhode Island Office of the Secretary of the State, Rhode Island State Building Code, International Residential Code for One and Two Family Dwellings, SBC-2  
[http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA\\_2087.pdf](http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA_2087.pdf) (Accessed February 18, 2004).

<sup>513</sup> R.I. Gen. Laws §23-27.3-100.1.2

<sup>514</sup> Source: State of Rhode Island General Assembly, Title 45 Index of Chapters,  
<http://www.rilin.state.ri.us/Statutes/TITLE45/INDEX.HTM> (Accessed February 27, 2004).

<sup>515</sup> Source: State of Rhode Island General Assembly, Housing Maintenance and Occupancy Cod §45-24.3-4,  
<http://www.rilin.state.ri.us/Statutes/TITLE45/45-24.3/45-24.3-4.HTM> (Accessed February 27, 2004).

<sup>516</sup> Source: State of Rhode Island General Assembly, Housing Maintenance and Occupancy Code § 45-24.3-3,  
<http://www.rilin.state.ri.us/Statutes/TITLE45/45-24.3/45-24.3-3.HTM> (Accessed February 28, 2004).

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separate sanitation or property and maintenance code. Instead, it has adopted a statewide Housing and Property Maintenance Code as part of its State Building Code. This part of the Code is promulgated by the property maintenance code subcommittee of the State Building Standards Committee.<sup>517</sup> All amendments to the regulations adopted by the Committee, subject to approval pursuant to § 23-27.3-109.1, are binding on cities and towns.<sup>518</sup> The state wide Housing and Property Maintenance Code consists of minimum requirements and standards to regulate occupancy and use of existing premises, structures, buildings, equipment and facilities.<sup>519</sup> The property owner is responsible for the safe and sanitary maintenance of buildings unless otherwise specified in the Code.<sup>520</sup> Also, effective July 1, 2007, the towns and cities of Rhode Island's Housing and Maintenance Occupancy code will include: §45-24.3-10 "General requirements relating to the safe and sanitary construction and maintenance of parts of dwellings and dwelling units." These requirements contain provisions that reflect ARC's building and sanitation concerns and will be discussed more in-depth in the sections on Rhode Island municipalities.

Anyone may propose amendments to the State Building Code, at any time, by filling out the required forms.<sup>521</sup> Petitions for amendments are considered by the committee at annual hearings or at other times and places determined by the committee.<sup>522</sup>

The code is enforced primarily at the municipal level by a local building official and local building inspectors. The building official is appointed by the appropriate local authority (a local government official) to enforce the code.<sup>523</sup> The appropriate local authority may also appoint one

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<sup>517</sup> R.I. Gen. Laws §23-27.3-100.1.3(b), 23-27.3-100.1.5.1.

<sup>518</sup> R.I. Gen. Laws §23-27.3-109.3.

<sup>519</sup> R.I. Gen. Laws §23-27.3-100.1.3(b).

<sup>520</sup> R.I. Gen. Laws §23-27.3-104.1.

<sup>521</sup> R.I. Gen. Laws §23-27.3-109.3.

<sup>522</sup> *Id.*

<sup>523</sup> R.I. Gen. Laws §23-27.3-107.1.

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or more full or part time building inspectors to assist the building official in enforcing the code.<sup>524</sup> The building official and his or her inspectors have the right of entry during normal business hours for the purpose of performing his or her duties, except in the case of an emergency, when the official has the right of entry at any time to ensure public safety.<sup>525</sup> Where there is no local building official, the state building commissioner will enforce the code.<sup>526</sup> The state building commissioner also acts as the executive secretary to the State Building Code Standards Committee.<sup>527</sup> A violation of the Code is punishable by imprisonment for not more than one year or by a fine of not more than five hundred dollars (\$500.00), or both, for each violation.<sup>528</sup> Each day any portion of a violation continues constitutes a separate offense.<sup>529</sup>

### **B. ARC & EPA Guidelines Compared to Rhode Island State Building Code**

As discussed above, the Rhode Island Code consists of adopted portions of BOCA 1996, the 2000 International Mechanical Code (IMC), the 2000 International Plumbing Code (IPC), the 2000 International Energy Code (IEC), and the relevant amendments adopted by the Building Code Standard Committee. A comparison of the ARC and EPA guidelines with the Rhode Island State Building Code reveals that the code addresses most of the ARC/EPA guidelines, but not all.<sup>530</sup>

Under the ARC recommended building practices principle category of “Pest Free”, the Rhode Island code stands up well.<sup>531</sup> BOCA 1996 §§ 1215.3.1-1215.3.3 address openings in

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<sup>524</sup> R.I. Gen. Laws §23-27.3-107.1.1.

<sup>525</sup> R.I. Gen. Laws §23-27.3-107.5.

<sup>526</sup> R.I. Gen. Laws §23-27.3-107.4.

<sup>527</sup> *Id.*

<sup>528</sup> R.I. Gen. Laws §23-27.3-122.3.

<sup>529</sup> *Id.*

<sup>530</sup> For applicable definitions for IMC 2000, the IPC 2000, and the IEC 2000, chapter 2 from each code is included in the appendix. For the applicable definitions for BOCA 1996, see appendix chapter of BOCA included in the appendix.

<sup>531</sup> Asthma Regional Council, *Building Guidance for Healthy Homes: Developed by The Asthma Regional Council*, 2, April 4, 2002.

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walls, slabs, and pipe and conduit openings and the use of corrosion proof materials to seal these openings in order to “ratproof” them. And, the C 2000 § 502.1.4.2 states that possible sources of air leakage should be sealed with “durable caulking materials, closed with gasketing systems, taped or covered with moisture vapor-permeable wrapping material.” This provision does not specify polyurethane caulk as the EPA guidelines do. Furthermore, BOCA 1996 §§ 1215.2-1215.2.2 specifically address the pest-proofing of a building’s foundation with or without an apron. Although ARC’s guidelines do not specify the pest or ratproofing of a building’s foundation, the EPA guidelines do. The Rhode Island Code thus meets both the ARC and EPA guidelines for a Pest Free home.

Next, under the ARC recommended building practices principle category of “Well-Ventilated/Free of Combustion Products and Toxins”, the first “hole” in the Rhode Island Code appears.<sup>532</sup> Although the ARC guidelines do not include this provision, the EPA guidelines specify that “fireplaces must be airtight.” The Rhode Island Code does not include such a provision. To what extent the absence of a provision regarding a fireplace is relevant to low-income housing, or any other type of housing in which the populations most affected by asthma reside is unclear. However, it is unlikely to be a recurrent issue. Moreover, the Code does include building specifications that meet each ARC guideline under this principle category for recommended building practices.

For instance, the Mechanical Code contains specifications related to exhaust fans in bathrooms and kitchens (§§ 501.3 and 505.1). Also, § 501.3 addresses the location of outdoor air intakes in relation to car exhaust as per the EPA guideline (see Appendix E-I). BOCA 1996 includes detailed provisions for the ventilation of roof spaces in §§ 1210.1 and 1210.3. In fact, BOCA 1996 is much more detailed than the ARC guideline: “ventilate attics at the soffits and

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<sup>532</sup> *Id.*

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ridges” (see Appendix E-I). In addition to focusing on the ventilation of attics, BOCA 1996 specifies that the ventilation openings “shall be tested for rain and snow infiltration” and that such infiltration shall not be permitted. Although the ARC guideline with regard to ventilating attics does not specify a concern for the introduction of water and moisture through the method of ventilation, ARC’s overall concern with the prevention of dry and clean structures suggests that ARC would approve of and encourage building practices such as those contained in § 1210. One area in which ARC is more specific than the Code is ductwork. The Mechanical Code § 603.8 specifies that joints, seams, and connections should be sealed in an energy efficient manner, but does not specify that “ductwork” must be sealed in such a manner and on the “suction side” as does the ARC guideline number twenty-four. The IMC 2000 § 603.11 does address the need for “provisions” to prevent the formation of condensation on ductwork (see Appendix E-I), but otherwise the Rhode Island code does not specify the manner in which ductwork is to be sealed or where it should or should not be located. In fact, the C 2000 § 503.3.3.4 defers to the IMC 2000 with regard to duct construction. This may be a point that ARC would want to address with the Rhode Island Building Code Standard Committee or state and city building inspectors.

Under the ARC recommended building practices principle category “Dry and Clean Structures”, there appears the greatest number of “holes” in the Rhode Island Code.<sup>533</sup> The first hole is related to keeping outdoor moisture out. Both the ARC and the EPA guidelines recommend drainage planes to remove water from the building structure to prevent the creation of reservoirs behind the exterior cladding.<sup>534</sup> The Code includes no such provision. ARC recommends backpriming exterior siding materials to eliminate a potential water reservoir in the

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<sup>533</sup> Asthma Regional Council, *Building Guidance for Healthy Homes: Developed by The Asthma Regional Council*, 4, April 4, 2002.

<sup>534</sup> *Id.*

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materials.<sup>535</sup> Again, the Code contains no such provision. Both ARC and the EPA also recommend the installation of a capillary break between the footing and the perimeter of the foundation wall in order to minimize the movement of moisture from the ground into the building structure.<sup>536</sup> The Code does not address capillary breaks. The Code, however, does include a provision on “site grading” that specifies the manner in which the ground immediately adjacent to the foundation must be sloped in order to divert water from the foundation (see BOCA 1996 § 1813.7) and for the drainage of storm water (see IPC § 1101.2). The code’s specifications with regard to site grading and drainage of ground water suggest an awareness of the need to eliminate water reservoirs at the foundation of a building. But, this provision alone does not meet the level of specification that the ARC and EPA guidelines do, nor does the code address the backpriming of exterior siding materials. ARC will want to increase awareness of the ways in which outdoor moisture can penetrate a building structure and how this can be prevented.

ARC also recommends that cold water pipes be insulated with permeable foam in order to minimize condensation in warmer temperatures.<sup>537</sup> The code contains no such building practice. This is another area ARC will want to address. In addition, while §§ 1813.1-1813.3 indicate that below-grade spaces should be “waterproofed” and “dampproofed”, the ARC and EPA guidelines regarding the insulation of basements, the provision of drain tile for basement footings, and the installation of a vapor barrier in the interior wall of a basement are at a level of detail much greater than that discussed in the code. This is further evidence that in Rhode Island, the building code does not describe building practices at the level of specificity that ARC and the EPA do for keeping a basement or below-grade space dry and clean.

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<sup>535</sup> *Id.*

<sup>536</sup> *Id.*

<sup>537</sup> *Id.*

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Above ground, on the other hand, the code does include building practices to keep the building structure clean and dry. In BOCA 1996, § 1405.3.10 specifies the use of “flashings...at the top and sides of all exterior and door openings in a manner as to be leakproof”, which is in line with the ARC and EPA guidelines for the provision of flashings on all windows and exterior doors in order to direct water away from wall cavities to the drainage plain.<sup>538</sup>

ARC also recommends that no plumbing be placed in exterior walls. Rhode Island has amended IPC 2000 § 305.6 “Freezing” to state in part: “...In climates with freezing temperatures, plumbing piping in exterior building walls or areas subjected to freezing temperatures shall be protected against freezing by insulation or heat or both.” Rhode Island’s amendment provides a means for preventing the freezing and breaking of pipes placed in exterior walls. However, ARC’s concern with plumbing placed in exterior walls is that it is hard to detect the leaks of such pipes.<sup>539</sup> While Rhode Island is concerned about preventing the leaking of pipes in exterior walls this amendment to the code does not carry the prevention to the level that ARC recommends. Due to the concern over preventing the leakage of such pipes, ARC may find an audience receptive to their building recommendation to only place plumbing in interior walls.

In terms of indoor plumbing, ARC recommends that hot water heaters are installed in rooms with drains or catch pans and floor coverings that are not water sensitive (see Appendix E-I). They also stipulate that clothes washers and hot water heaters should have easy to shut off valves (see Appendix E-I). These recommendations are to minimize damage from leaks.<sup>540</sup> Rhode Island amended IMC 2000 § 504.7 “Required Pan” to include their own § 504.7 “Safe Waste.” This amendment includes specifications for a 6 gallon capacity or larger “safe waste”, properly trapped and vented, to capture discharge from the water heater where no other means of

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<sup>538</sup> *Id.*

<sup>539</sup> *Id.*

<sup>540</sup> *Id.*

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acceptable points of indirect discharge (other than the required catch pan for the water heater) are available. This amendment extends upon the ARC guideline for water heater catch pans and meets the EPA guideline for the outdoor ventilation of a water heater. However, there is no mention of the type of floor covering for the room where the water heater is located.

Furthermore, the code does not include a building practice of installing easy to use shut off valves for washers, dryers, and water heaters. Whether or not this is an oversight or assumed to be the procedure is unclear.

The EPA guidelines also recommend that ventilation from clothes washers and furnaces be vented outside and that water heaters and furnaces must be “sealed.” The EPA guidelines are unclear on what it means by “sealed” and the code does not mention such a practice. In IMC 2000, § 504.1 does state that dryer exhaust systems “shall convey moisture and any products of combustion outside of the building” in accordance with the EPA guidelines; the code does not specify the ventilation of a furnace.

In the bathroom and other rooms where water is used (kitchens and utility rooms), the EPA guidelines state that no wall to wall carpet should be used (see Appendix E-I). Pursuant to BOCA 1996 § 2907.4.1, floor surfaces where there are showers are to “be constructed of smooth, non corrosive, non absorbent and waterproof materials.” The code does not include a similar provision for kitchens and utility rooms and may be a point that ARC will wish to address. Also, ARC and the EPA include practices regarding the use of materials other than paper-faced gypsum board or where to place gypsum board to avoid the wicking of moisture in the shower.<sup>541</sup> (see Appendix E-I). BOCA 1996 § 2503.4 addresses the purpose of these guidelines: “In all areas subjected to repeated damp conditions and moisture accumulation such as bathtub and shower compartments, water-resistant gypsum backer board” should be used “unless protected

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<sup>541</sup> *Id.*

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with a moistureproof and vaporproof covering...” Finally, BOCA 1996 § 2907.4 provides that the wall areas surrounding showers and tubs should consist of waterproof materials, which form a “watertight joint” with each other and the tub, receptor or shower floor. Similarly, the ARC guidelines suggest that bathtub and shower enclosures should be enclosed with rigid materials to minimize air flow which encourages moisture and pests.<sup>542</sup> From the language of § 2907.4, the building practices therein described seem most concerned with limiting moisture in the bathroom. ARC’s focus, though, is also on pests. It appears that § 2907.4 also may function to limit pests entering through the bathroom as well.

ARC also specifically recommends the sealing of walls to prevent air flow, for example in utility walls where they intersect with exterior walls and ceilings (see Appendix E-I). Both the IPC 2000 and the IEC 2000 address this recommendation. § 304.4 of the IPC addresses openings in walls, floors or ceilings for the passage of pipes and states that these passages should be “closed and protected by the installation of approved metal collars that are securely fastened to the adjoining structures.” Similarly, § 502.1.4.2 of the IEC 2000 states: “...sources of air leakage, shall be sealed with durable caulking materials, closed with gasketing systems, taped or covered with moisture vapor-permeable wrapping material.” The Code thus adequately addresses this provision of the ARC guidelines. Likewise, for the EPA guideline: “seal all plumbing, electrical, penetrations of walls/floors with polyurethane caulk” (see Appendix E-I), IPC 2000 § 304.4 and IEC 2000 § 502.1.4.2 address this specification.

In general, the Rhode Island Code, through its adoption of BOCA 1996, the IMC 2000, the IPC 2000, and the IEC 2000 addresses the majority of the ARC/EPA guidelines. While the field research revealed that building inspectors are responsible for aspects of the Code which overlap with the IMC 2000, the IPC 2000, and the IEC 2000, their primary responsibility to these

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<sup>542</sup> *Id.*

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codes is related to safety and structure.<sup>543</sup> The fire marshal is responsible for the fire code, the mechanical inspector for the mechanical code, and so on. While this level of specification may result in a more thorough examination of a structure with regard to a part of the code, it may also contribute to confusion in terms of responsibility. For instance, a leaking pipe is the responsibility of the plumbing inspector and the building inspector when the leak rots the wood in a wall or the floor. ARC will need to recognize these types of divisions in responsibility and knowledge when addressing and instructing state and city inspectors.

### **C. Field Research**

As with other states included in this project, the field research portion for Rhode Island presented significant challenges. State building inspectors are busy, out of the office for most of the business day, and difficult to reach. For these reasons, only inspectors from Providence and Newport were interviewed. On March 16, 2004 a field inspector in Warwick redirected the interviewer to his director and did not return a message requesting an interview with him. The interviewer had access to the Director's secretary but the secretary never returned any calls. However, an enforcement officer from the Department of Minimum Housing was interviewed from each municipality. Additionally, the Project Manager of the State of Rhode Island Asthma Control Plan<sup>544</sup> in the Rhode Island State Department of Health was interviewed regarding issues of asthma and asthma triggers in the state.

Of the three municipalities, Providence and Newport provide an informative comparison of the building inspectors' duties, challenges, and awareness of asthma and other respiratory illnesses due to their differences and similarities in demographics. Providence is the largest of

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<sup>543</sup> Interview, Providence, RI building inspector, March 16, 2004. Interview, Newport, RI building inspector, March 17, 2004.

<sup>544</sup> Source: State of Rhode Island Department of Health, *State of Rhode Island Asthma Control Plan 2002-2007*, <http://www.health.ri.gov/disease/asthma/RI%20Asthma%20Plan%2020020622.pdf> (Accessed March 20, 2004).

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the three municipalities studied and Newport is the smallest. Providence has a substantial minority population and Newport is predominantly White. Providence and Newport, however, have more renter-owner occupied housing than owner-occupied compared to Warwick. These two municipalities also have more residents living below the poverty line than Warwick. Such similarities provide ARC with focused information on the populations it is most concerned with, namely low-income and minority.<sup>545</sup>

As the State Building Code is enforced at the municipal level, the interviewer inquired of the inspectors which they enforce—the State Building Code or the local housing ordinances. The Providence building inspector said that the State Code is what they have to follow. He said it overrides any of the city ordinances as far as safety goes, though zoning is different and done at a city level. The Newport inspector confirmed that the State Code is the code which inspectors abide by. He said that the city ordinances are the minimum housing standards, and while all cities can make stricter standards, most do not. He said, “The national code is quite adequate so towns do not have to make their own regulations.” It is important to note that under the Rhode Island General Laws, the cities and towns are not to make their own building codes.<sup>546</sup> The Newport inspector specified that the minimum housing standards apply to dwellings in the city. He said, also, that statewide minimum housing standards have not been officially adopted. He is partially correct; Rhode Island has vested the “powers of council” for enforcing state sanctioned minimum housing standards in the city and town councils, effective July 1, 2007.<sup>547</sup>

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<sup>545</sup> Interview March 15, 2004, Project Manager of the *State of Rhode Island Asthma Control Plan*, Rhode Island Department of Health.

<sup>546</sup> R.I. Gen. Laws §45-24.3-4.

<sup>547</sup> R.I. Gen. Laws §45-24.2-3.

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The Providence and Newport building inspectors are both responsible for inspecting a wide range of structures. On March 16, 2004, a Providence building inspector said that his focus in an inspection is structural and he works with all types of buildings: new, old, commercial, residential, industrial, and apartment buildings. Similarly, on March 17, 2004, a Newport building inspector said that he inspects structures that range from single family homes to retail stores, dormitories, and high rises. Both said that someone who wants to build or renovate a structure is supposed to come in and obtain a building permit. The Newport inspector, however, said he inspects renovations more than new structures. He said that “the fire marshal does (inspects new structures); they have the personnel to do so.” The Providence inspector said he works on both new buildings and renovations. The Newport inspector’s comments regarding the fire department having the manpower to inspect new structures implied that his department does not. The notion that there are an insufficient number of inspectors in his department was shared by the Providence inspector. The Providence inspector said that the lack of manpower affected his department’s ability to enforce the State Building Code: “You don’t have the manpower to enforce the code 150 percent.” He added that his division could use at least four more men. He said that because Providence is the capital city there is a lot of construction going on, which makes “even keeping up with little renovations tough.” One issue that ARC would want to address, then, is the number of inspectors per city and how to increase their numbers. Without enough people to inspect new and existing structures, ensuring that the code’s specifications are met becomes a virtual impossibility.

Though the inspectors share the concern of insufficient manpower, the process of enforcing the code differs between the municipalities. The Providence inspector said his department will issue a warning letter that gives the property owner time to respond to the

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violation. If the owner does not address the problem, the owner is then issued a violation that is then recorded against the property if the owner does not respond to the violation. The Providence inspector said that if the violation is “very severe, they get an immediate violation and no warning letter” and his department requires an “immediate response”; for example, “the building may be falling down (or) there may be major issues.” When asked to specify the consequences of a violation, the Providence inspector said that with a minor violation, the owner gets thirty days, while for a severe violation the owner gets fifteen days to respond. He said that he usually hoped to catch the owner on the phone or at the location in violation in order to inform them of the time limit they have to fix or tear down the structure. The Providence inspector said that he follows up with the owner at the end of the fifteen or thirty days.

If he cannot find the owner, the Providence inspector said that “the chase is on.” He will give a housing court referral and said that “hopefully” the summons will bring the owner to court. He said that “a lot of times they won’t come until called to court.” He added there are many reasons why they do not want to respond, whether because of finances or because they do not understand the seriousness of the problem. Access, then, is a problem for the Providence inspector. Despite the warning and violation process, in Providence, the inspector said “there are no real penalties if an owner of a building maintains renovations without a permit.” The inspector said he cannot demand access to a building if an owner will not give it, unless he gets a court order. However, he said, “judges aren’t willing to do that unless there is proof—I can’t say ‘I heard a rumor’.” The Providence inspector said he tries to enforce compliance, but unless there is a complaint, he cannot go in and inspect the building. If he cannot get into the building, he will dismiss the complaint.

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However, according to the Rhode Island General Laws, the inspectors have the right of entry during normal business hours for the purpose of performing their duties, except in the case of an emergency, when the official has the right of entry at any time to ensure public safety.<sup>548</sup> Either the Providence inspector is unaware of his legal rights or the building owners and landlords are unwilling to assist the inspectors. Each possibility tells ARC there is a need for greater education of inspectors and the public about the legal rights and duties of building inspectors, at least in Providence.

When directly asked if he works with many landlords, the Providence inspector said that Minimum Housing was responsible for “dealing with landlords.” However, he said that he also responds to complaints from tenants whose landlords promised to complete repairs and have not done so. He also said that neighbors will call in complaints when they become tired of excessive cars or excessive noise. Although the Providence inspector did not specify why excessive cars or noise is a complaint to which he will respond, both the Providence and Newport inspectors said that the creation of illegal apartment units is a problem in their city. The Newport inspector said he has inquired about the number of units in a building and a tenant has responded “five” when on record there are four. Excessive cars or noise, then, indicates too many persons or units in a building.

Unlike the Providence inspector, the Newport inspector said he works mostly with landlords. Another difference in Newport is its more stringent enforcement process. “No matter what we find, we record it and send it to a landlord and give him a reasonable time to repair.” Although a landlord is given time to make the necessary repairs, the Newport inspector said that he will still cite the problem as a “deficiency” as no warnings are issued. Another difference between the Providence and Newport inspectors is that the Newport inspector clearly knew his

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<sup>548</sup> R.I. Gen. Laws §23-27.3-107.5.

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legal rights. He said, “If we suspect someone is working without a permit, we can go in any time during normal working hours.” He added that the need to obtain a search permit occurs rarely. Moreover, he said that “the builders are pretty good, Newport is pretty small...you can see a lot of activity outside anyway.” He explained that the presence of work trucks or dumpsters is a tip off that work is being done. He has never had to obtain a search permit, but usually encounters contractors who tell him they thought the owner had obtained the necessary permits.

The Newport inspector offered his own critique of the Newport housing code. He said Newport does not have the method or process or staff to go in year round and check structures on a regular schedule. Therefore, he said, the Newport inspectors respond to complaints by legal tenants and respond to each of that tenant’s complaints. The Newport inspector’s comments clearly indicate a relationship between sufficient manpower and a regular inspection check of existing structures. The process of only responding to tenant complaints misses violations that go unreported. The Newport inspector’s comments provide ARC with a possible method to catch a greater number of building code violations: enough manpower to institute a regular inspection process.

The two inspectors also differed on their top concerns during the inspection process. The Providence inspector said that fire safety is a “big issue”, but that part of the inspection process is between the mechanical inspector and the fire marshal. Next on the Providence inspector’s list of importance is structural integrity, including the structural end of the energy code, means of egress, fire separation between apartment units, and framing inspection. When asked about moisture, mold, or mildew, the Providence inspector said that they are not covered under the current code. In an inspection, he said “we could mention it but we are not authorized to enforce it.” This inspector said they would mention moisture, mold, or mildew during an inspection

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because eventually one would rot out wood. However, he said, they do not have the “ability to test it.” For pests, the Providence inspector said that as a rule they do not deal directly with pest infestations, but if a tenant calls because the floor is dipping due to a pest infestation then he will go in and insure the repairs are done properly. The Providence inspector had not had asthma training and has had no personal experience with asthma.

When given a list of concerns which should be covered during the inspection process, the Newport inspector said that “they’re all important...they need to be worked out.” He then gave an example of a tenant in a third-floor apartment that did not have a fire escape. He suggested that she get out of an apartment without a fire escape and she was willing to leave. “I don’t like to kick people out of their houses, either” he said. But, as the Newport inspector made clear during the interview, he is responsible for “any life safety issue associated with the building code.” This tension between safety and allowing someone to stay in their apartment could potentially intensify as building inspectors become more aware of asthma triggers.

However, the Newport inspector said that issues of mold and inadequate ventilation are “important also.” He said he would not throw them out, citing imminent danger, but would give the landlord or owner time to fix things. The Newport inspector said that rather than post the building as not habitable, he would bring the landlord into municipal court so the tenant could stay. He emphasized the importance of a landlord meeting “standard living conditions” and added that he often has to threaten the landlord with court. Resistance from landlords or building owners to fixing mold or ventilation issues suggests that ARC will need to also focus its educational endeavors on these populations.

The Newport inspector said he gets “a lot of leaking situations...ceiling leaks are common.” He said that most leaks come from bathrooms, showers, or people who do not use the

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shower curtain coupled with a floor that is not in good shape. Also, “if you live under the roof that’s another source of leak,” he said. The Newport inspector said that his office receives mold and mildew calls as well, but that these calls “are tough for them to comment on because it takes all kinds of analyzing equipment to determine...which we don’t have...unless it (the mold or mildew) is really obvious.” Instead, he said he will try to track down or notice the water problem, then eliminate the water and moisture, “certainly if it is evident on walls or bathroom walls.” He said that they will order the landlord to remove the sheetrock or wallpaper that is damp and to stop the leak.

Unlike the Providence inspector, the Newport inspector does not see his hands tied by the code’s limitations in terms of rectifying a mold or mildew problem. Rather, he is aware that detection of certain mold and mildew conditions requires advanced equipment which he and his fellow inspectors do not have. Therefore, in Newport, while the awareness is there, the tools to identify asthma triggers like mold and mildew are absent. ARC will want to work with inspectors to get their departments such equipment. Like the Providence inspector, the Newport inspector does not have asthma-related training and does not have personal experience with asthma. However, he said that all building inspectors are required by law to complete ninety hours of continuing education every three years on all aspects of the Building Code. The Newport inspector said that the Newport inspectors have had mold and mildew seminars that train them in the ill effects of moisture. He said that this is a different focus from approximately ten years ago, when the focus was more on the collapse of a structure and/or rotting wood. This avenue of regular training for inspectors is a place where ARC will want to explore including asthma-related training for building inspectors. Also, since the Providence inspector did not

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mention this required training, ARC will want to inquire into whether or not all inspectors participate in this training.

Both inspectors shared insights into the adoption of the State Building Code and the situation of housing in their respective towns that provide ARC with other avenues to explore and address when implementing recommended building practices. The Providence inspector said that the state representatives do not “really help with financing for code books. We’re still in 1996 and should be in 2003.” He said they were supposed to begin using the International Building Code 2000 and they did get the 2000 Residential code for one and two-family dwellings. “There’s something about passing laws with building codes. It makes it hard to enforce; the newer codes are more stringent. In order to do that we need state senators and reps to say ‘we adopt it’.” The Providence inspector lamented, “Usually a tragedy like The Station nightclub fire brings this to the attention of the government. They don’t realize it is a public safety issue, not just about raising money. The Station fire should never have happened.”

The Providence inspector is referring to the fire in West Warwick, RI at The Station nightclub, which killed ninety-eight patrons on February 20, 2003.<sup>549</sup> Rhode Island, almost a year earlier, had begun working with the National Fire Protection Association (NFPA) to adopt provisions of the NFPA in order to better address safety issues in buildings that are more than ten years old.<sup>550</sup> These provisions became part of the “State of Rhode Island Rehabilitation Building and Fire Code for Existing Buildings and Structures” that was to take effect on May 1, 2002 and permitted the repair and renovation of buildings more than ten years old without full compliance

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<sup>549</sup> Source: Building Design & Construction, *NFPA Acts Quickly to Address Nightclub Disasters*, <http://bdcmag.com/newstrends/newsnightclub.asp> (Accessed February 25, 2004).

<sup>550</sup> Source: achrnews.com, *Rhode Island Takes Steps to Utilize Building Code*, [http://www.achrnews.com/CDA/ArticleInformation/RegionalNews\\_Item/1.6084.72540.00.html](http://www.achrnews.com/CDA/ArticleInformation/RegionalNews_Item/1.6084.72540.00.html) (Accessed January 29, 2004).

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with the State Building Code.<sup>551</sup> However, three weeks after The Station fire, the NFPA Technical Committee on Assembly Occupancies and Membrane Structures held an emergency meeting in Boston.<sup>552</sup> This committee proposed emergency code amendments, or Tentative Interim Amendments, that occur between editions of a particular document.<sup>553</sup> These amendments were designed specifically to address fire safety in assembly occupancies like The Station nightclub.<sup>554</sup>

According to the Providence inspector, the Rhode Island Rehabilitation Code may have been eliminated in favor of this amended version of the fire code after the Station fire. “The fire code is very stringent...there is no grandfathering (under the fire code),” he said. Therefore, although the State Building Code does not use the most up-to-date building code, its fire code is stringent and current. ARC will want to emphasize the discrepancy between the building and fire codes when pushing for healthy home building guidelines. For instance, the mechanical, residential, electrical, energy, and plumbing codes are all the 2000 edition of the IBC, though the building code is still BOCA 1996 (see Rhode Island State Structure above).

The Newport inspector also said that the IBC 2000 was supposed to be adopted to replace BOCA 1996 in August of 2003. However, he said, “Rhode Island has a strange process (for adopting codes)—it has to go through law makers, be accepted chapter and verse.” He added that there is “a lot of play in getting a code adopted...people can come in and protest.” The comments of both inspectors about the legislative process for adopting the State Building Code

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<sup>551</sup> Source: State of Rhode Island, *Rhode Island Rehabilitation Building and Fire Code for Existing Buildings and Structures*, [http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA\\_1899\\_.pdf](http://www.rules.state.ri.us/rules/released/pdf/DOA/DOA_1899_.pdf) (Accessed March 20, 2004).

<sup>552</sup> Source: NFPA online, *Fire Safety in Assembly Occupancies*, <http://www.nfpa.org/Research/FireInvestigation/RIslandFire/Summary/summary.asp> (Accessed February, 25, 2004).

<sup>553</sup> *Id.*

<sup>554</sup> *Id.*

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tells ARC that it should put its energy into lobbying for a more efficient State Building Code adoption process.

Finally, both inspectors expressed two more concerns in their towns. First, the formation of illegal apartments undermines the State Building Code and the work of the building inspectors. The Providence inspector said that because of the high cost of housing in Providence, owners and landlords will create illegal apartments in attics or basements to generate more income. Many of these apartments are not built according to the law and the owner does not obtain a building permit. One population, in particular, is at the mercy of such owners. The Providence inspector said that “illegal immigrants that need a place to stay and will pay to live anywhere... won’t complain about living by a boiler, with 12-inch windows that no one could get out of, and a narrow winding stairway if they can afford it at \$650.00 a month” because they are afraid someone will call them in.

The Newport inspector said that because of Salve Regina University in Newport, many students move to Newport for nine months out of the year, or for the summer, and do not complain about their landlords not doing maintenance or about other poor housing conditions. He said that where the demand for housing is high, many landlords will simply pocket the money and not do repairs. Thus, in the context of rising rental costs and high demand for housing, both cities have two populations subject to poor living conditions that often go unreported and thereby undermine the purpose of the Building Code. In addition, both inspectors said that renovations and additions often go unreported because people do not want the inspector reporting to the tax assessor, resulting in higher property taxes. Since neither inspector said that his city has the manpower to inspect properties on a regular schedule, incidences of non-reporting significantly undermine the effectiveness of the Code and the purpose of the building inspector in enforcing

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the Code. This is an important issue that ARC will need to address if it hopes for its healthy home building guidelines to have any effect.

The field research revealed that BOCA 1996 is not the most stringent building code available; that the Rhode Island legislative process slows the adoption of more up-to-date building codes; that there is an insufficient number of building inspectors to institute systematic checks of existing structures; that the high demand and high cost of housing undermines the Code; that landlords and building owners are fearful of having their taxes raised, so do not apply for building permits; and that not all inspectors are aware of their legal rights as building inspectors. This research also showed that some inspectors are receiving training in asthma triggers like mold, mildew, and ventilation, but lack the equipment necessary to identify these triggers. Each revelation provides the ARC with an avenue into the building inspection process in order to address building guidelines for healthy homes.

### **D. Conclusion**

The Rhode Island State Building Code, though somewhat outdated, is still rather comprehensive and addresses the majority of the ARC/EPA guidelines. On some points, the Code's provisions are more specific than the ARC/EPA guidelines and, as the comparison between these guidelines and the Code demonstrates, the Code is not specific enough on other points. ARC will want to address both sides when working with the relevant parties in Rhode Island.

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## **III. Sanitation Code**

### **A. Rhode Island State Laws**

Rhode Island has codified various provisions regarding minimum housing and housing maintenance and occupancy standards under Title 45 §45-24.2-3 and Title 45 §45-24.3, respectively. However, the housing inspectors in Newport, Warwick and Providence have said that when enforcing minimum housing standards, they almost always look to the standards that have been codified in the local ordinances. This section will not present in depth the minimum housing standards, inspection and enforcement procedures that have been codified in the Rhode Island General Laws; instead municipal housing codes will be thoroughly reviewed in subsequent sections. Other state laws that will be reviewed in this section are the Rodent Control Act and the Landlord-Tenant Act.

### **B. Minimum Housing Standards**

As mentioned above in Section II-A, Rhode Island has “Minimum Housing Standards” pursuant to Title 45 §45-24.2 and has declared that dwellings and dwelling premises are at substandard levels due to “dilapidation, deterioration, and disrepair...structural defects, uncleanliness, lack of adequate ventilation... sanitary...occupancy of unfit dwellings...which increase the hazards of illness, disease....” These conditions are dangerous to people living in these cities and towns. Therefore, “it is a matter of legislative determination that the establishment of minimum standards for dwellings is essential to the protection of the public health, safety, morals, and general welfare.” Under §45-24.2-3, “Powers of Councils” authorizes any city or town council to “pass, ordain, establish, and amend ordinances, rules, regulations for the establishment and enforcement of minimum standards for dwelling” such that the “public health, safety, morals or general welfare” is promoted and such that all dwellings are made “safe,

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sanitary, and fit for human habitation.”<sup>555</sup> This Chapter also provides various provisions as to what minimum housing standards may be included when creating and implementing the ordinances.<sup>556</sup> In addition, cities and town councils who have been given the authority to implement local housing ordinances also have the authority to establish enforcement agencies and a housing board review.

### **Housing Maintenance and Occupancy Code**

The Housing Maintenance and Occupancy Code authorizes towns and cities to establish minimum standards for dwellings and dwelling units regarding the condition and maintenance of property such that “public health, safety and welfare” are protected. In addition, the Chapter establishes minimum standards regarding essential facilities and utilities in order to create dwellings that are “safe, sanitary, and fit for human habitation.”<sup>557</sup> The Housing Maintenance and Occupancy Code also provides various laws regarding the powers and duties of the enforcing officer to inspect dwellings and dwelling premises; what is to be included in a notice of violation when premises are deficient; penalties for noncompliance and unresponsiveness to violation notices; application for reconsideration of notice; when dwellings are considered to unfit for human habitation; and repairs and demolitions of unfit dwellings. Under section 45-24.3-6, owners and occupants have various responsibilities regarding the maintenance of

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<sup>555</sup> R.I. Gen. Laws, §45-24.2-3(a), (2003). (<http://www.rilin.state.ri.us/Statutes/TITLE45/45-24.2/INDEX.HTM>).

<sup>556</sup> R.I. Gen. Laws, §45-24.2-3(b)(1)-(14), (2003).

<sup>557</sup> R.I. Gen. Laws, §45-24.3-3, (2003).

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dwellings and dwelling units.<sup>558</sup> Section 45-24 includes various minimum state standards; however similar municipal standards are analyzed further in each municipality section.<sup>559</sup>

### **Rodent Control Act**

A “Rodent Control Act” has been adopted by the Rhode Island General Laws, Title 23 “Health and Safety,” §23-7.1-1 through §23-7.1.6.<sup>560</sup> The purpose of this Act is to “promote the public health, welfare, and safety and to prevent injury, disease or detriment to human life” through the control and eradication of rodents.<sup>561</sup> Local communities are responsible for instituting rodent control programs.<sup>562</sup> The Department of Health must cooperate with the local communities in developing and carrying out rodent control programs.<sup>563</sup> Of the three municipalities, Providence and Warwick have instituted Rodent Control Acts, which will be further reviewed *infra*.

### **Landlord-Tenant Act**

Under Rhode Island General Laws §34-18-22 “Landlord to maintain premises,” a landlord must comply with the requirements of the applicable building and housing codes affecting health and safety.<sup>564</sup> Some of the duties of the landlord are as follows: ensure that the premises are kept in a “fit and habitable condition”; ensure that the common areas are in a clean and safe condition; ensure that all appliances, fixtures and facilities are maintained in a “good

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<sup>558</sup> R.I. Gen. Laws, §45-24.3-6(a)-(k), (2003). (<http://www.rilin.state.ri.us/Statutes/TITLE45/45-24.3/INDEX.HTM>). Some owner responsibilities include: maintenance of public areas; providing garbage facilities and containers; providing and hanging of screens; and extermination of insects, rodents or other pests. Some occupant responsibilities include: maintenance of private areas; proper disposal of garbage in facilities and containers provided; maintenance and replacement of screens; extermination of insects, rodents or other pests; and maintenance of plumbing fixtures and facilities.

<sup>559</sup> Various minimum state standards regarding the basic equipment and facilities are presented in § 45-24.3-7 (1)-(4); for light and ventilation in § 45-24.3-8 (a)-(e); for the safe and sanitary construction and maintenance of parts of dwellings in § 45-24.3-10 (1)-(20).

<sup>560</sup> R.I. Gen. Laws, §23-7.1-1, (2003). (<http://www.rilin.state.ri.us/Statutes/TITLE23/23-7.1/INDEX.HTM>).

<sup>561</sup> R.I. Gen. Laws, § 23-7.1-2, (2003).

<sup>562</sup> *Id.*

<sup>563</sup> *Id.*

<sup>564</sup> R.I. Gen. Laws, §34-18-22, (2003). ). (<http://www.rilin.state.ri.us/Statutes/TITLE34/34-18/INDEX.HTM>).

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and safe working order and condition”; provide and maintain receptacles for garbage and their disposal.<sup>565</sup>

Tenants also have a duty to comply with “all obligations primarily imposed upon tenants by applicable provisions of the building and housing codes materially affecting health and safety.”<sup>566</sup> Some of the duties of the tenant are as follows: premises that the tenants occupy should be kept in a clean and safe condition; garbage is to be disposed in a clean and safe manner; plumbing fixtures are to be kept in a clean condition as permitted; all fixtures, appliances, and facilities are to be used in a reasonable manner.<sup>567</sup> Landlords also may adopt rules regarding a tenant’s use and occupancy of premises.<sup>568</sup> In addition, if a landlord is cited for a housing code violation by a state or local minimum housing code enforcement agent, the landlord has the duty to notify the tenant of this violation.<sup>569</sup>

If the landlord does not comply with the provisions of §34-18-22 in such a way that it materially affects health and safety, the tenant may deliver written notification to the landlord indicating that the acts and omissions constitute a breach and therefore the rental agreement will terminate subject to the provisions in §34-18-28.<sup>570</sup> Under §34-18-39, if the tenant does not comply with the provisions of §34-18-24 and materially affects health and safety, then the landlord may enter the dwelling unit to remedy the conditions.<sup>571</sup> The landlord may submit the bill to the tenant if the tenant has been given reasonable time to remedy the condition but has failed to do so.<sup>572</sup>

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<sup>565</sup> *Id.*

<sup>566</sup> R.I. Gen. Laws, §34-18-24, (2003).

<sup>567</sup> *Id.*

<sup>568</sup> R.I. Gen. Laws, §34-18-22, (2003).

<sup>569</sup> R.I. Gen. Laws, §34-18-22.1, (2003).

<sup>570</sup> R.I. Gen. Laws, §34-18-28, (2003).

<sup>571</sup> R.I. Gen. Laws §34-18-39, (2003).

<sup>572</sup> *Id.*

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### Case Law

The courts in Rhode Island do not appear to have decided on many cases that deal directly with asthma triggers and sanitary housing issues. It is somewhat unclear as to how courts would decide on cases that deal with infestation from vermin, vectors or mold; the courts have decided that landlords have a duty to make any necessary repairs in order to keep the premises in a fit and habitable condition as stated under Rhode Island General Laws §34-18-22(2). In *Errico et al. v. LaMountain et al.*, tenant fell into the concrete walkway headfirst when the railing of her leased home collapsed because it was rotten.<sup>573</sup> In lower court proceedings, the jury found for the tenant because the railing was of dangerous condition and caused her injuries. The jury found that the landlords were liable to the tenant for her injuries sustained because they had a duty to repair and warn the tenant about the defective condition. The jury awarded the tenant \$100,000.

On appeal, the Court affirmed trial court. The Court held that under Rhode Island General Laws §34-18-1 et seq., the landlords had a duty to maintain the railing in a fit and habitable condition. The duties listed are continuous ones and the act does not state that these duties end when the tenant leases and lives in the premises. Violation of this statute does not automatically constitute a breach of a duty of care. The jury must still find that landlords have breached their duty. The Court held that the landlords had breached their duty of care because sufficient evidence was introduced at trial to find that the railing already had deteriorated before plaintiff's fall. Thus the landlords knew or should have known about the condition, and are responsible due to failure of care.

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<sup>573</sup> 713 A.2d 791 (June 19, 1998).

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The tenant also may be able to withhold rent if the landlord fails to keep in the premises in a fit and habitable condition. In *McKendall Land Co., Inc. v. Niazmand*<sup>574</sup>, landlord sought an eviction for the tenant's failure to pay rent. However, the tenant claimed that because he had spent thousands of dollars to repair the property for it to be in a habitable condition, he was not obligated to pay rent. On remand, one of the issues that the Superior Court reviewed was when the tenant should be obligated to pay rent, if at all. The Providence Housing Code §13-88 provides provisions regarding the designation of unfit dwellings. The landlord admitted that the premise was in "deplorable" conditions when the tenant began occupancy. Due to the tenant's and landlord's statements regarding the conditions of the premises, the Court held that until the conditions of the premises become in compliance with the relevant Providence City Code provisions, the tenant did not need to provide rent because the landlord failed to deliver to tenant a property that was in compliance with the applicable building and housing code provisions affecting health and safety. The Court also decided that the landlord needed to obtain a written certificate from an appropriate city official certifying that the premise was "habitable for human beings" in order for the landlord to receive payment from tenant. The landlord did not provide sufficient evidence to show habitability; therefore, although the property had not been deemed uninhabitable by Providence City, the Court could not find the premise habitable without certification.

Although there do not appear to be cases that are on point regarding asthma triggers and sanitary conditions of homes, from the cases reviewed above, the tenants and the public may be able to use these cases to their advantage when bringing a claim regarding unsanitary conditions of homes and health issues. It appears that the Rhode Island Courts have clearly stated that the landlord has a duty to maintain premises in a habitable condition and that tenants have the right

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<sup>574</sup> 1992 R.I. Super. LEXIS 118.

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to abate payment of rent if the premises are not up to standards of habitability. Thus, Rhode Island Courts seem to have ruled more favorably for the tenants. The Courts also clearly appear to be concerned about the health and safety of the public. Thus, if a tenant were to bring a claim regarding mold, vermin or vectors, the Courts may rule in favor of the tenant as mold, vermin, and vectors have the potential to cause serious health problems if they are not eradicated from homes.

### **C. Municipal Ordinances (Newport, Warwick, Providence)**

Newport, Warwick and Providence have adopted local ordinances regarding minimum housing standards. The sections of the code that are most relevant to inspection and enforcement, responsibilities of owners and occupants, and sanitation standards have been reviewed. The section which is most relevant when comparing the ARC and EPA guidelines is sanitation standards, which reviews provisions regarding the minimum standards of basic equipment and facilities requirements, ventilation requirements, general requirements relating to safe and sanitary maintenance of dwelling and dwelling units, requirements for basement habitation, and rodent proofing.

#### **The City of Newport Chapter 15.12: Housing Code**

**Inspection and Enforcement Procedures** Newport has codified ordinances regarding minimum housing standards within Chapter 15.12 “Housing Code.” In terms of inspection and enforcement procedures, the chief of the division of inspection has the power to make inspections to determine the condition of dwellings and premises for the purpose of “safeguarding the health and safety of the occupants of the dwellings and of the general public.”<sup>575</sup> When inspecting a premise, the chief or any of his/her authorized representatives

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<sup>575</sup> Code of Ordinances, Newport, §15.12.020, (2003). (<http://ordlink.com/codes/newporttr/index.htm>).

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have the authority to enter, inspect and survey at any reasonable time.<sup>576</sup> The owner or occupant must allow the chief or any of his/her authorized representatives to freely access such dwelling, dwelling unit or premises so that an inspection can be made.<sup>577</sup> If there are repairs or alterations that need to be made such that the dwelling, dwelling unit or premises is in compliance with the necessary standards of this Chapter, every occupant must allow the owner to make these repairs or alterations.<sup>578</sup>

If the chief of the division of inspection finds that there are reasonable grounds to believe that any provision of this chapter has been violated, a notice will be sent to the owner or occupant.<sup>579</sup> The owner or occupant who has received such a notice may request a hearing if a written notice is sent to the office of the director.<sup>580</sup> Provisions as to when a dwelling or dwelling unit is condemned as unfit for human habitation and the various procedures as to condemnation are provided in §15.12.190. Under §26-74 “Notice to city of rental housing vacancy units ten years old and older,” inspectors must approve the dwelling before further occupancy. This section was established because “the minimum housing has determined a far greater number of violations in rental dwellings older than ten years.” Notification requirements, procedure and inspection are noted under section 26-74(c). Of the three municipalities, Warwick is the only city that requires inspection of vacant rental houses prior to re-occupancy.

**Responsibilities of Owners and Occupants** Section 15.12.170 requires owners and occupants to maintain the dwelling or dwelling unit in a clean and sanitary condition.<sup>581</sup> In terms of maintenance of public space, all owners of a dwelling with two or more units are responsible

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<sup>576</sup> *Id.*

<sup>577</sup> *Id.*

<sup>578</sup> *Id.*

<sup>579</sup> Code of Ordinances, Newport, §15.12.030, (2003).

<sup>580</sup> *Id.*

<sup>581</sup> Code of Ordinances, Newport, §15.12.170(A)-(B), (2003).

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for maintaining shared or public areas in a clean and sanitary manner.<sup>582</sup> All occupants of a dwelling or a dwelling unit are required to maintain their own private space and keep the area that they occupy and control in a clean and sanitary manner.<sup>583</sup>

In terms of rodent and insect proofing, under §15.12.170(D), the occupant must dispose all garbage and waste “which might provide food for rodents” in a clean and sanitary manner by putting it in appropriate facilities and containers stated in §15.12.130(E).<sup>584</sup> All occupants of a single dwelling unit must exterminate any vectors or vermin therein or on the premises. All occupants of a dwelling unit with more than one unit, if only their unit is infested, shall be responsible for extermination within their own unit.<sup>585</sup> The owner will be responsible for extermination when there is infestation in two or more units in a dwelling or if there is infestation in the shared or public areas of any dwelling containing two or more dwelling units.<sup>586</sup> Whenever the infestation is caused by the owner’s failure to maintain a dwelling (to appropriately ratproof or insectproof the dwelling units), then the owner will be responsible for extermination.<sup>587</sup>

In terms of plumbing, under §15.12.170(F), it is the responsibility of the occupant of a dwelling unit to maintain all plumbing fixtures in a clean and sanitary condition.<sup>588</sup> Under Newport’s Housing Code, the owner does not have any responsibility to maintain plumbing fixtures.

**Sanitary Standards** Various sections within Newport’s Housing Code address sanitary maintenance of property in order to protect the owner-occupant’s and tenant’s health and also

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<sup>582</sup> Code of Ordinances, Newport, §15.12.170(A), (2003).

<sup>583</sup> Code of Ordinances, Newport, §15.12.170(B), (2003).

<sup>584</sup> Code of Ordinances, Newport, §15.12.130(E), (2003).

<sup>585</sup> Code of Ordinances, Newport, §15.12.170(E), (2003).

<sup>586</sup> *Id.*

<sup>587</sup> *Id.*

<sup>588</sup> Code of Ordinances, Newport, §15.12.170(F), (2003).

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address asthma triggers such as vermin, vectors, moisture, and mold. First, §15.12.130 states the minimum standards that are required for basic equipment and facilities (e.g. kitchen sink, bathtub or shower, lavatory basin, toilet, water-heating facilities, garbage and rubbish disposal).<sup>589</sup> In general, the kitchen sink, bathtub, shower, lavatory basin, toilet and water-heating facilities must be in “good working condition” and the garbage and rubbish disposal must be in “adequate” condition.<sup>590</sup> Having the equipment and facilities that involve water be in “good working condition” is extremely important as improper conditions can lead to an increase in mold and moisture. In addition, having “adequate” equipment and facilities regarding garbage disposal is extremely important as this could decrease or eradicate the infestation of vermin and vectors. If these provisions are not met, an owner or a tenant cannot occupy a dwelling or a dwelling unit for the purpose of living, sleeping, cooking or eating.<sup>591</sup> Almost all of the provisions under §15.12.130 must be approved by the chief of the division of inspection.<sup>592</sup> Therefore, it appears as though the chief is given the discretion to determine what is meant by “good working condition” or “adequate.” However, having the equipment and facilities in “good working condition” and at an “adequate” standard may not be preventive enough to reduce asthma triggers within households as they are minimum standards and they appear to be overly broad and general.

In terms of adequate ventilation, under §15.12.140(B), every habitable room must have “at least one window or skylight which can be easily opened, or such other device as will adequately ventilate the room.”<sup>593</sup> There are guidelines as to the size, placing, and openability of

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<sup>589</sup> Code of Ordinances, Newport, §15.12.130 (A)-(H), (2003).

<sup>590</sup> *Id.*

<sup>591</sup> Code of Ordinances, Newport, §15.12.130, (2003).

<sup>592</sup> *Id.*

<sup>593</sup> Code of Ordinances, Newport, §15.12.140(B), (2003).

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the window.<sup>594</sup> If there is no window within the room, the chief of the division of inspection must approve some other device that will provide adequate ventilation.<sup>595</sup> In addition, §15.12.140(C) states that every bathroom or water closet compartment must comply with the provisions in §15.12.140(B).<sup>596</sup> Therefore, there must either be a window or a skylight.<sup>597</sup> No window or skylight is required in a bathroom or water closet compartment if another device (approved by the chief of inspection<sup>598</sup>) provides adequate ventilation.<sup>599</sup> If there is non-compliance with the requirements and standards outlined in provisions §15.12.140, 150, 160 the owner-occupant or tenant may not occupy the dwelling or dwelling unit.

Section 15.12.160 also provides requirements regarding adequate ventilation in a basement if such a space were to be used as a habitable room or dwelling unit. Under §15.12.160(F)(2)-(F)(4), there must be a window, which is in compliance with the size and openability requirements in §15.12.140(A), or there must be some other system affording adequate ventilation, which shall be approved by the chief.<sup>600</sup>

Newport's Housing Code addresses conditions regarding water under §15.12.150. Every foundation, floor, wall, ceiling, roof, window, exterior door, basement hatchway must be "reasonably weathertight, watertight."<sup>601</sup> All plumbing fixtures and water and waste pipes shall be properly installed and maintained in "good sanitary working condition, free from defects, leaks and obstructions."<sup>602</sup> All water closet compartment and bathroom floor surface must be constructed and maintained "so as to be reasonably impervious to water and so as to permit such

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<sup>594</sup> *Id.*

<sup>595</sup> *Id.*

<sup>596</sup> Code of Ordinances, Newport, §15.12.140(C), (2003).

<sup>597</sup> *Id.*

<sup>598</sup> *Id.*

<sup>599</sup> *Id.*

<sup>600</sup> Code of Ordinances, Newport, §15.12.160(F)(2)-(F)(4), (2003).

<sup>601</sup> Code of Ordinances, Newport, §15.12.150(A)-(B), (2003).

<sup>602</sup> Code of Ordinances, Newport, §15.12.150(D), (2003).

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floor to be easily kept in a clean and sanitary condition.”<sup>603</sup> In addition, §15.12.160 also addresses water and moisture where if a basement is to be occupied, then the floors and walls are to be “impervious to leakage of underground and surface runoff water and are insulated against dampness.”

Within §15.12.140 “Minimum standards for light, ventilation and heating”, there exists a provision for the use of proper screens for windows and doors. If the chief finds necessary, proper screens for windows and doors must be installed.<sup>604</sup> In addition, the section also addresses that basement or cellar windows or openings must be supplied with screens or other devices.<sup>605</sup> Although screens help to properly ventilate a premise, Newport explicitly states that the reason for providing screens and other devices in basement windows and openings are to “effectively prevent the entrance of rodents or other vermin.”<sup>606</sup>

In terms of vermin control, along with the provisions under §15.12.130, §15.12.140, and §15.12.170, *supra*, §15.12.150 states that every foundation, floor, wall, ceiling, roof, window, exterior door, and basement hatchway must be “reasonably...rodentproof.”<sup>607</sup> Unlike Warwick and Providence, *infra*, Newport does not have a separate Article or Chapter regarding vermin control.

### **The City of Warwick Chapter 26: Housing Code**

**Inspection and Enforcement** Warwick has adopted Chapter 26 as their Housing Code, which contains sixteen articles. The purpose of this chapter is to protect the public health, safety, and welfare by establishing minimum housing standards that manage the condition and

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<sup>603</sup> Code of Ordinances, Newport, §15.12.150(E), (2003).

<sup>604</sup> Code of Ordinances, Newport, §15.12.140, (2003).

<sup>605</sup> Code of Ordinances, Newport, §15.12.140, (2003).

<sup>606</sup> Code of Ordinances, Newport, §15.12.140, (2003).

<sup>607</sup> Code of Ordinances, Newport, §15.12.150(A)-(B), (2003).

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maintenance of all dwellings and dwelling premises.<sup>608</sup> In addition, this chapter establishes minimum standards by which dwellings and dwelling units can be deemed safe, sanitary and fit for human habitation.<sup>609</sup> If there are provisions that conflict with another provision then the provision which “establishes the higher standard for the promotion of the health and safety of the people shall prevail.”<sup>610</sup>

In order to safeguard the health, safety, and welfare of the occupants of dwellings and the general public, the director of minimum housing standards is authorized to make inspections to determine if the premise is in compliance with the standards in this chapter.<sup>611</sup> Warwick’s inspection and enforcement procedures appear to be similar to Newport’s and have been codified in Article III, §26-61 through §26-74. Warwick’s Article IV, §26-101 also appears to have similar provisions regarding how to designate whether or not a dwelling is unfit for human habitation. However, various provisions regarding notification procedures as provided in §26-103 through §26-115, appear to be more specific than Newport’s.

**Responsibilities of Owners and Occupants** Chapter 26, Article X is titled “Responsibilities of Owners and Occupants” and encompasses §§26-291 through 26-300. Warwick and Newport have similar standards for maintenance of private space (§26-292), garbage disposal facilities (§26-294), and plumbing (§26-297). However, standards are different regarding the maintenance of public space (§26-293) and pest extermination (§26-295). In terms of §26-292, Warwick additionally states that occupants of two or three family dwellings must share the responsibility of keeping the common areas of the premises and dwellings in a clean and sanitary condition. For pest extermination, Warwick lacks an additional provision that is

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<sup>608</sup> Code of Ordinances, Warwick, §26-4, (2001). (<http://www.warwickri.gov/officialdocs/code/chapter26.htm>).

<sup>609</sup> *Id.*

<sup>610</sup> Code of Ordinances, Warwick, §26-6, (2001).

<sup>611</sup> Code of Ordinances, Warwick, §26-61, (2001).

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given in the Newport Code §15.12.170(E), which states that if there is infestation in two or more of the dwelling units in any dwelling or in the shared or public parts of a dwelling containing two or more dwelling units, then it is the responsibility of the owner to exterminate the area. It appears as though Newport's code may be giving additional responsibilities to owners in regards to pest extermination than Warwick's code.

Within Chapter 26, Article X, Warwick also provides provisions regarding the use of screens. Under this section, all occupants of a dwelling or a dwelling unit must be responsible for the use of all screens according to the provisions of §26-175, *infra*. It is the duty of the owner to supply these screens. The provision regarding screens is missing entirely from Newport's section on "Responsibilities of Owners and Occupants." However, Newport's code does address screens in §15.12.140 "Minimum standards for light, ventilation and heating", as discussed *supra*.

**Sanitary Standards** Like Newport's Housing Code, Warwick has adopted basic equipment and facilities standards.<sup>612</sup> The standards for the kitchen sink, flushing toilet, lavatory basin, bathtub or shower, and garbage disposals are identical to Newport's standards. However, Warwick provides provisions regarding floor surface while Newport's code does not. In Warwick, every bathroom, toilet room or compartment must be made of material that is impervious to water.<sup>613</sup> If not, then it must be "covered with fitted linoleum or painted or varnished" such that the floor surface is "reasonably impervious to water."<sup>614</sup> The occupants must keep the floors in dry, clean, and sanitary conditions.<sup>615</sup>

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<sup>612</sup> Code of Ordinances, Warwick, §26-141 through §26-147, (2001).

<sup>613</sup> Code of Ordinances, Warwick, §26-145, (2001).

<sup>614</sup> *Id.*

<sup>615</sup> *Id.*

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As in Newport, Warwick requires, under Article VI, that all habitable rooms, bathrooms, and toilet rooms have at least one window, a skylight or an approved “adequate ventilation.” Regarding basement ventilation, all basements must have “at least two vents or windows opening directly to the outside air sufficient to prevent mildew or structural deterioration and properly equipped with approved screening.”<sup>616</sup> Basement ventilation is further expanded in the Warwick and Newport’s articles regarding “Minimum Space, Use and Location Requirements,” and the outlined basement provisions are similar in both municipalities. As under Newport’s §15.12.140(G), Warwick’s §26-176 also addresses the use of approved proper screenings for windows and or openings in the basement. Warwick’s code states that a basement must have at least two vents or windows that open to the outside air, properly equipped with approved screening which is “sufficient to prevent mildew or structural deterioration.”

The provisions in Warwick’s Article IX “Safe and Sanitary Maintenance” are similar to Newport’s in terms of plumbing and keeping windows and doors “reasonably weathertight, watertight, and rodentproof.” However, the standard for structural elements is different, as Article IX, §26-263 states that every floor, exterior wall, and roof must not have any “holes, wide cracks, and loose warped, protruding or rotting boards or any other condition which might admit moisture or rodents, or which might constitute a hazard to health or safety.”<sup>617</sup> Interior walls and ceiling also must be properly maintained.<sup>618</sup> All windows, exterior doors and bulkheads must be kept in “sound working condition and good repair” such that they are “reasonably weathertight, watertight, and rodentproof.”<sup>619</sup>

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<sup>616</sup> Code of Ordinances, Warwick, §26-176, (2001).

<sup>617</sup> Code of Ordinances, Warwick, §26-263, (2001).

<sup>618</sup> *Id.*

<sup>619</sup> Code of Ordinances, Warwick, §26-264, (2001).

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In terms of rodent control, Warwick has adopted within Chapter 26, Article XIV, §26-411 through §26-420. All structures being erected, repaired, changed or extended after November 19, 1953 must be ratproofed.<sup>620</sup> No owners or occupants shall maintain premises in a rodent-infested manner or allow premises to become infested with rodents.<sup>621</sup> If a building inspector has “good reason to believe” that any premises is not in ratproof condition, the inspector has the authority to make an inspection. If the premises are infested, a written notice will be served upon an owner or occupant.<sup>622</sup> After receipt of a notice, it is the duty of the owner or occupant to “take immediate measures to remedy the condition” such that the premises are no longer vermin or rat infested.<sup>623</sup> If anyone fails to comply with any of the provisions in this article, that person shall be penalized.

**The City of Providence**  
**Chapter 13: Housing Code**  
**Chapter 12, Article V: Rat and Vermin Control**

**Inspection and Enforcement** Providence has adopted a Housing Code under Chapter 13, which contains thirteen articles. In addition, Chapter 12 provides relevant health and sanitation provisions within Article V “Rat and Vermin Control.” The purpose of Chapter 13 “Minimum Standards Housing Ordinance” is similar to the purpose established in Warwick’s Minimum Housing Standards. While Warwick’s and Providence’s Minimum Housing Codes address the purpose and applicability in the beginning of the housing codes, Newport’s code lacks this introduction. General inspection and enforcement procedures appear to be similar to those of Newport and Warwick. Additional inspection and enforcement procedures are codified in

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<sup>620</sup> Code of Ordinances, Warwick, §26-415, (2001).

<sup>621</sup> Code of Ordinances, Warwick, §26-412, (2001).

<sup>622</sup> Code of Ordinances, Warwick, §26-415, (2001).

<sup>623</sup> Code of Ordinances, Warwick, §26-417, (2001).

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Article II, “Enforcement.”<sup>624</sup> Providence’s Article IV, §13-88 through §13-101 also appears to have provisions similar to Newport and Warwick regarding how to designate whether or not a dwelling is unfit for human habitation. However, under §13-90 through §13-101, various provisions regarding the notification procedures appear to be more specific than Newport and Warwick.

**Responsibilities of Owners, Operators, and Occupants** Chapter 13, Article X, §13-200 through §13-211, “Responsibilities of Owners, Operators, and Occupants” is very similar to Warwick’s code in terms of maintenance of public and private space, garbage disposal, pest extermination, and plumbing. Like Warwick, Providence also has a provision in this article regarding the use of screens under §13-206. However, Warwick explicitly states that “said screens shall be supplied by the owner” while Providence does not discuss to whom this responsibility should be allocated. In addition, Providence’s code allows for the shifting of responsibilities. Section 13-201 states that “nothing in this chapter shall prevent an owner, operator or occupant from shifting the responsibility of the one to the other, provided that the primary and final responsibility in every case shall remain upon the person herein designated.”<sup>625</sup> The Warwick and Newport housing codes do not have this provision.

**Sanitary Standards** Article V “Sanitary Requirements” are similar to the sanitary equipment standards for Warwick and Newport in terms of kitchen sink, flush toilet, lavatory basin, bathtub and shower bath, and garbage storage and disposal facilities. Like Warwick, Providence’s code also addresses impervious floor surface of bathroom, toilet room or compartment.<sup>626</sup> In addition, under §13-118, there must be grading and draining of dwelling

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<sup>624</sup> Code of Ordinances, Providence, §13-38 through §13-49, (2002).  
(<http://livepublish.municode.com/26/lpext.dll?f=templates&fn=main-j.htm&vid=11458>).

<sup>625</sup> *Id.*

<sup>626</sup> *Id.*

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premises such that water cannot leak into a basement or a cellar or such that water cannot build up or stay within or on the premises.<sup>627</sup> A roof, surface or sanitary drainage cannot create a “structural, safety or health hazard by reason of construction, maintenance or manner of discharge.”<sup>628</sup> Warwick addresses grading and draining within Article IX, “Safe and Sanitary Maintenance,” but not in the article regarding sanitary equipment standards. Newport does not address this at all in the city’s housing code.

Ventilation requirements are addressed in Article VII “Lighting and Ventilation; Electrical Facilities” and Article VIII “Use and Access of Dwelling Space.” The provisions provided in Articles VII and VIII are similar to Warwick’s. In terms of screening of doors and windows, Providence’s code §13-152 states that the approved screening shall be supplied by the occupant when it is not supplied by the owner. The responsibility of supplying the approved screen, which was absent in Article X, §13-206, is provided. In addition, like Warwick, Providence’s code states that every basement must have windows or ventilation systems “sufficient to prevent mildew or structural deterioration.”<sup>629</sup> Regarding proper ventilation in a basement, Article VIII §13-170 provides provisions similar to Newport and Warwick’s.

Providence’s provisions regarding “Safe and Sanitary Maintenance” are addressed in Article IX.<sup>630</sup> The standards for plumbing and “reasonably weathertight, watertight, and rodentproof” windows and doors are the same for all three municipalities. In terms of structural elements and infestation, Warwick and Providence have similar standards.

In terms of infestation, Article IX, §13-188 mandates that all dwellings, dwelling units, and dwelling premises must be free of infestation and must be in compliance with the required

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<sup>627</sup> Code of Ordinances, Providence, §13-118, (2002).

<sup>628</sup> Code of Ordinances, Providence, §13-118, (2002).

<sup>629</sup> Code of Ordinances, Providence, §13-153, (2002).

<sup>630</sup> Code of Ordinances, Providence, §13-182 through §13-189, (2002).

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provisions regarding rat control under Article V, Chapter 12, §12-110 through §12-117 “Rat and Vermin Control.”<sup>631</sup> The rat harborage provision, under §12-117, appears to be more specific than Warwick’s. Specific enforcement procedures are provided in §12-117. Provisions as to when a premise is deemed to be in a rat or vermin infested condition such that inspection and enforcement may be triggered are given in §12-111.

Providence’s code is similar to Warwick’s in terms of rat proofing structures; however, Providence also requires that rats be eradicated from buildings before demolition, which is lacking in Warwick’s code.<sup>632</sup> The definitions for “ratproofing” and “rat eradication” are similar to Warwick’s. Although inspection and enforcement procedures appear to be similar between the codes of Warwick and Providence, in Warwick, a building inspector is responsible for ordering a rat/vermin inspection of premises while in Providence it is the duty of the superintendent of health.

### **ARC & EPA Guidelines Compared to Municipal Ordinances**

In general, it appears as though the ARC and EPA guidelines regarding ventilation are more specific than the Newport, Warwick and Providence standards. In addition, the ARC and EPA guidelines, which provide various ways to keep a structure dry and clean, appear to be more specific than the municipal standards. The ARC and EPA guidelines regarding ways in which to keep homes pest free also are stricter than the municipal codes. The following numbers, which correspond to the numbered ARC and EPA guidelines in the chart, are analyzed against the local ordinances: 2, 5-7, 9(a-c), 10-13, 22-23, and 28-30.<sup>633</sup>

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<sup>631</sup> Code of Ordinances, Providence, §13-188, (2002).

<sup>632</sup> Code of Ordinances, Providence, §12-113, (2002).

(<http://livepublish.municode.com/26/lpext.dll?f=templates&fn=main-j.htm&vid=11458>).

<sup>633</sup> See Appendix 7-E-II for chart analyzing local codes and ARC/EPA Guidelines.

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## **Ventilation**

Newport, Warwick and Providence’s ventilation requirements are such that every habitable room and bathroom have a device that will “adequately ventilate” the rooms. “Adequately ventilate” is not defined within the local codes, and the type of device that is necessary to meet the requirement also is not provided. In that sense, the municipal codes are deficient in comparison to ARC and EPA guidelines.<sup>634</sup> In addition, from the language of the local codes, it appears as though enforcement officers of each municipality have the discretion of approving the device that will “adequately ventilate” a habitable room or bathroom. If the enforcement officers are not trained properly in terms of ventilation devices, they may be approving devices that are not up to the standards of the ARC and EPA guidelines.

Although ARC has guidelines regarding the ventilation of attics, there is no discussion of basement ventilation, which is addressed in the local codes of all three municipalities. EPA guidelines do not discuss ventilation of attics and basements, whereas in Newport, Warwick and Providence, basement ventilation guidelines are provided in terms of windows. In that sense, ARC and EPA guidelines appear to be deficient as they do not specifically address basement ventilation standards.

## **Dry and Clean Structures**

In terms of basement guidelines, it appears as though ARC and the EPA provide ways in which a basement can be kept free of moisture and water via proper insulation and drain tiles.

The local codes state that basement floors and walls must be impervious to water and insulated

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<sup>634</sup> In terms of ventilation, ARC states that a person should “install exterior exhausting fans in bathrooms and kitchens. Use durable and quiet fans (less than 3 sones).” Also, ARC provides that a kitchen with gas cook tops and gas ovens should have “power vented fans or range hoods” exhausting to the exterior. EPA states that “ENERGY STAR fans for exhausting air in all bathrooms to the outside” and in kitchens, “updraft fans” which are non-recirculating types should not be used and fans rated “at no more than 5.0 sones” should be used. Exterior exhausting fans are important because they remove moisture and excess humidity which can cause the development of mold.

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against dampness. However, the local codes are deficient because, unlike the ARC and EPA guidelines, they do not suggest the materials that should be used by an owner or tenant in order to make a basement floor or wall impervious to water and to insulate against dampness.

In terms of plumbing, the local codes state that all plumbing fixtures must be in a working condition that is “safe”, “good sanitary” and free of defects, leaks and obstructions. However, ARC states “no plumbing in exterior walls” while EPA further specifies that a person should “seal all plumbing...penetrations of walls/floors with polyurethane caulk.” The local codes do not specify how plumbing fixtures can be kept free from defects, leaks and obstructions, nor do they specify what the guidelines are for plumbing fixtures to be in or to be maintained in “good sanitary” and “safe and sanitary” working conditions. On the other hand, ARC specifically states exactly where plumbing should not be in order for a home to be kept dry. The EPA goes even further and specifies the materials to be used in sealing plumbing fixtures.

Proper insulation of cold water pipes also prevents moisture build up in warm temperatures. ARC suggests that cold water pipes be insulated with permeable foam. While the local codes state that water pipes must be installed properly and maintained in good condition that is sanitary and safe and free from leaks and defects, as with plumbing fixtures, the codes do not specify how to obtain and maintain these “good,” “safe,” and “sanitary” standards. In that sense, the municipal codes are deficient.

In addition to plumbing and water pipe guidelines, ARC and the EPA provide various guidelines on how to keep floors and walls free of moisture. Newport’s code indicates that the bathroom floor shall be “reasonably impervious to water” such that the floor is “easily” maintained in a “clean and sanitary” condition. ARC appears to have the clearest guidelines in terms of how to keep the bathroom impervious to water as its guidelines discourage the

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installation of carpet.<sup>635</sup> The EPA, on the other hand, does not specify that a carpet cannot be used in the bathroom and only prohibits wall to wall carpeting. However, the EPA is clear on the quality of carpet that is to be used in bathrooms. Newport's code does not address what needs to be done or what types of materials need to be used in order for a bathroom floor to be "reasonably impervious," "easily" maintained and kept "clean and sanitary." However, Warwick's and Providence's guidelines for keeping floors impervious to water are more specific than Newport's and state that the bathroom floor surface must be constructed of "material impervious to water." Warwick and Providence's codes also state that a bathroom floor, if not constructed with material impervious to water, must be painted, varnished, or fitted with linoleum such that the floor would be reasonably waterproof. Warwick and Providence's codes are more stringent than Newport's and are at standards closer to the ARC and EPA guidelines.

ARC also suggests that "smooth and washable surfaces" should be installed in other rooms/areas wherever possible such as the common areas, bedrooms, and living rooms. Although Newport's code states that all floors shall be "reasonably watertight," there are no direct suggestions as to what types of floors should be installed in order to keep them "reasonably weathertight." Providence and Warwick do not address keeping floors "reasonably weathertight."

The purpose of the ARC guidelines "seal holes to prevent air flow" and "seal bathtub and shower enclosures with rigid materials" is to minimize airflow that could bring moisture into the homes. Newport states that structures must be kept "reasonably weathertight, watertight" while

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<sup>635</sup> Under the ARC guidelines, one should not install carpet in wet areas such as bathrooms, laundry rooms, kitchens, entry rooms, and damp basements. Materials such as vinyl, wood, tile, and rubber should be used in order to prevent moisture and mold build up because they are smooth and easily cleanable and washable. In wet areas, cement board, fiber cement board, or cement plaster should be used instead of paper-faced gypsum board to prevent moisture. The EPA provides that "no wall to wall carpet shall be used in bathrooms...All carpet and carpet adhesives shall carry the Carpet and Rug Institute (CRI) green and white low-emitting product label."

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Providence and Warwick are more stringent as they state that structures must be “free of holes.” In that sense, Newport’s provision is not up to the ARC standards as “reasonably weathertight, watertight” may not necessarily mean that the structure is “free of holes.” On the other hand, Providence and Warwick provisions appear to be up to ARC’s standards.

### **Pests**

When reviewing ARC and EPA guidelines regarding pest free homes, their standards appear to be more specific than local codes.<sup>636</sup> All three local standards are to “reasonably...rodentproof.” Providence and Warwick provisions also provide that structures must be kept “free of holes.” ARC and the EPA specifically state the type of material that is necessary to seal the openings. In addition, ARC’s guideline specifically emphasizes the need to “avoid materials that rodents can chew,” which is lacking in the EPA guidelines. The local codes are the least preventive, as these sections do not mention what is needed to be done in order to “reasonably...rodentproof” or keep “free of holes” the foundation, floor, wall, ceiling, and roof nor do they mention the materials needed to “reasonably...rodentproof” and keep “free of holes.” In that sense, the local codes regarding rodent control are entirely deficient.

Warwick and Providence also have separate Articles XIV and XII, respectively, that deal with rat and vermin control, which are more specific than the standards provided in the minimum housing codes. The rat and vermin control articles discuss “ratproofing”, which consists of “treating all actual or potential openings” with “material impervious to rodent gnawing” and is defined more specifically than to “reasonably...rodentproof.” Yet, Warwick’s and Providence’s

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<sup>636</sup> In addition, the EPA provides that a person should “seal all openings with polyurethane caulk”, “where opening cannot be fully caulked or sealed, provide rodent and corrosion proof screens (copper or stainless steel mesh)”, and “protect any exposed foundation insulation with pest-proof cover such as fiber cement board or galvanized insect screen.” Again, the same ARC guidelines “seal holes to prevent air flow” and “seal bathtub and shower enclosures with rigid materials” which minimize airflow and moisture also are guidelines to minimize pest infestation. In addition, ARC provides that one should “seal utility openings and joints between materials” and “use corrosion proof materials (e.g., copper and stainless steel mesh)” to keep homes pest free.

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rat and vermin control articles are still deficient in the sense that the actual materials which should be used to seal the openings or actual materials that are considered to be impervious to rodent gnawing are not specified. However, Warwick and Providence come closer to the ARC and EPA standards than Newport because both cities have adopted a separate vermin control ordinance, which addresses the deficiencies regarding vermin control under the minimum housing standards and defines “ratproofing.”

### **D. Field Research**

#### **Newport**

In an interview on March 24, 2004, a housing inspector at the Newport Minimum Housing Division reported that when doing inspections, she looks to the Newport Housing Code. If the city does not have a local housing code, then the city must use the Housing Maintenance and Occupancy Code under Chapter 45. However, she stated that Rhode Island is in the process of reviewing and looking into adopting a state wide housing code like the International Property and Maintenance Code.

In general, there are two types of inspection. One is an area inspection, which is uncommon, where an inspector surveys the properties in the neighborhood and inspects the entire structure - roofs, wall, floors, and so on. The second type of inspection, which is how almost all inspections are conducted, is in response to a complaint where an inspector will review the complaint brought forth by the landlord and tenant. The complaint will then be registered and an inspection on the house will be done based on the nature of the complaint received. The housing inspector commented that as a “seasoned” inspector, when inspecting, she will not only do an inspection based upon the complaint received but also will do a thorough inspection of the premises in terms of other aspects that could be triggering the complaint. For example, if there is

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a leaky ceiling, she will inspect the floors, walls and any other surroundings that may be affected by the leak and other areas that may be causing the leak.

Most of the inspections are done on houses and areas where people are living in “forgotten property” which is, in general, lower income. The housing inspector stated that she sees herself as an inspector, but also as a mediator and health enforcer. When tenants make a complaint, many of them are looking for an authority figure to intervene; thus, acting as a mediator, she will inspect the conditions of the house and try to help the landlords and tenants negotiate.

In terms of curing the violation, in an emergency situation where there is no heat or electricity such that the violation is creating or could create a health problem, then the response time to cure the violation is 24 to 48 hours. Most landlords remedy this problem immediately. For non-emergency cases, there will be a thirty day response period after the initial citation. A re-inspection will be done after the thirty day period, and if the house is still in noncompliance with the housing standards, another thirty days will be given. If appropriate remedy is not taken, then the landlord may be taken to court.

According to the housing inspector, moisture is one of the most common cites in Newport. She has received many complaints regarding leaky roofs, water on floors and in bedrooms, living rooms, and bathrooms. Although unaware that moisture and mold could trigger asthma attacks, the housing inspector stated that she is “really aware that mold is a growing problem.” She mentioned that she had received training regarding mold. Often, the housing inspector sees homes where the walls of the house are covered with black, furry mold such that an increase in ventilation and fans are necessary. She had one extremely bad case where a rented

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carriage house was covered with so much mold that everything the family owned was completely ruined. Therefore, the housing inspector appeared to be well aware that mold is a serious issue.

The housing inspector has not received any asthma related training. Although she stated it is possible that housing conditions could trigger asthma attacks or other health problems, she also emphasized that no one has called in with a complaint saying that the mold in the house may be triggering asthma or a health problem. In addition, she mentioned that the connection between asthma and mold has not been made clear to her.

In addition, the housing inspector was not aware that pests can trigger asthma attacks. However, pests do not appear to be a big problem in Newport, as the housing inspector stated that she had received “less than a handful of mice calls” in the years that she has worked at the division. Cockroaches also are not a big problem, as there are good active spraying programs within various housing complexes; therefore, the standard of care regarding cockroaches is decent.

According to the housing inspector, she believed that the extent of care in terms of housing inspections differs from community to community. In addition, what is important in inspections constantly changes. The issues have ranged from asbestos to lead to radon and now the new “buzzword” is mold. The housing inspector stressed that every time a new issue arises and more lawsuits are filed for that issue, there is “constant pressure from the legislature” to “force it upon a community to do something about it.”

The Newport Minimum Housing Division’s office is an extremely small office. The housing inspector receives a fair amount of complaints, but she does not feel as if she is overwhelmed by the number of complaints received. She did indicate, though, that more

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manpower gives the ability to be more proactive about inspections. Currently, they mostly inspect houses based on the complaints that they receive.

### **Warwick**

A housing inspector at the Warwick Minimum Housing Division was interviewed on Thursday, March 4, 2004. The interview began with a description of the general procedures of an inspection. Almost all, 99.8 percent, of the complaints are received via phone. Once they receive a complaint, an inspector will be sent out to the property to verify if the complaint is valid. If there is a violation, a notice will be given, and the occupant or tenant will be given a certain amount of time to update the maintenance of the property. The inspector will then recheck the property. If the property is in compliance, no further action is taken. However, if the property is not in compliance, then a second notice is sent out. Upon another inspection, if the violation is still outstanding, then a third notice or a court notice will be sent out. The inspector said that Warwick inspectors are in court most Thursday nights and it usually takes a two-week period to get into court in Warwick, while in Providence, it may take months.

Depending on the complaint, inspections are done to make sure that the premises are not in violation of the minimum standards. When asked the types of neighborhoods inspected, she stated that the inspectors at the office have been to “every neighborhood and every street in Warwick.” Most inspections regarding interior complaints are for rental unit apartments. She believed that mold and moisture were among her top concerns because improper maintenance of houses can lead to health and sanitary issues. In addition, many of the complaints are regarding paint and debris issues, which are most of the violations that are cited. They also receive many complaints regarding plumbing issues, leaky roofs, weather-tight windows, and increases in heating bills.

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This inspector emphasized that the codes are minimum standards. She expressed her frustrations with the minimum standards in dealing with complaints from people and explained that your “head is saying one thing to you but you can’t necessarily turn around and say don’t do it unless it’s in the ordinances.” When people call in to make a complaint, sometimes she is unable to address the complaint because it is not addressed in the minimum housing standards code; thus, “it’s more about the legality of the situation.” In addition she expressed that it is difficult to decipher whether or not sanitary types of issues are due to improper maintenance by the occupant of the dwelling or because the property is old and the structure is breaking down. Overall, she felt that it was very difficult as an inspector to actively improve various housing conditions.

The inspector stated that she rarely cites chronic moisture or dampness, and they would receive about one or two complaints. However, over the past couple of year, there have been more complaints regarding moisture and dampness than in previous years. In addition, she has rarely cited pest infestation. Most infestation citations are in regards to fleas and termites. She was not aware of the fact that moisture, mold, or pests could trigger asthma attacks and has not received any training regarding asthma.

The inspector told me that she has a five year old daughter who is being tested for athletic induced asthma. When informed of the scope of this project, she told me that she understood why we were analyzing the codes and researching issues regarding enforcement of these codes. She has temporarily relocated to her mother’s house, which is extremely old, as her own house is in the process of being built and explained to me that she could feel the difference in the air quality from her previous dwelling.

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Warwick has a population of 85,808 persons where the land area for the city is 49.6 square miles. The Minimum Housing/Enforcement Division is extremely small, consisting of five people: the chief of enforcement, three part time enforcement officers and an office assistant, who also does inspections. The inspector expressed that they are very short on staff considering the number of complaints that they receive; therefore, there are difficulties in being more proactive about inspections and enforcement of the housing codes. In addition, the housing inspector pointed out that although most of the inspections are triggered by complaints, but §26-74 is probably the only way that they will actually go out and do an inspection without first having received a complaint. She believed that Warwick was the only or one of the very few municipalities in Rhode Island with this ordinance. If other municipalities adopted a similar ordinance, this could be an effective way of triggering mandatory housing inspections, which in turn would require greater staffing capacity.

### **Providence**

A housing inspector at the Providence Housing Division was interviewed on March 4, 2004. He began by describing the general procedures of inspection. A complaint is received and then an ownership check is done on the property. An inspector will do an inspection on the property and then if a violation is found, a notice is typed up. If the violation is minor, they will give about 30 days to remedy the violation and then they will re-inspect the premise to see if it is in compliance with the housing code. If there are several violations, they will work with the occupant by giving more time to remedy certain violations. If the violation is serious, they also will work with the occupant to remedy the violation. For example, they may say that half of the violation must be cured within 30 days while the other half must be cured within 60 days. One interesting point regarding the enforcement procedure in Providence, which the Warwick

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inspector did not state, is that when a complaint is received and a Providence inspector is sent out to verify the complaint, this inspector will cite any additional violations that he or she can visually see on the premises. For example, the inspector will walk around the building or house and take note of any exterior violations, or if he is walking up the stairs and sees that the stairs are not up to code, he will cite it as a violation even though that was not the complaint received. The inspector will cite any violations that he sees on his way to the area which he must inspect according to the complaint; however, he will not go into the basement to check if it is up to standards, if he doesn't need to go through the basement to get to the area that he must inspect.

In general, inspections are done mostly in multi-family rental homes, with about 90 percent being lower income. Most of the inspections, 95 percent plus, are triggered by an individual complaint via telephone call. Inspection procedures basically remain the same for all types of dwellings, buildings, locations and such. Chronic moisture or dampness is cited less than approximately 25 percent of the time whereas pest infestations are cited more than approximately 50 percent of the time. However, the inspector noted that paint is the number one violation and many complaints regarding heat are received, which mirrors what the Warwick inspector stated.

The inspector has not received any training regarding asthma and did not know that moisture, dampness, and pests could trigger asthma attacks. However, as the Warwick inspector did, the Providence inspector understood the scope of our project. In previous years, the office rarely received complaints regarding asthma and sanitary issues but did receive one or two calls where someone would ask that their home be inspected because their child has asthma. Over the past few years, they have received only a few complaints, but last year they received about four or five complaints regarding asthma. However, the inspector stated that it is difficult to make the

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connection as to whether it is an actual individual health issue or whether induced because the house is not clean which then affects health. The inspector seemed enthusiastic to receive asthma training.

Throughout the interview, the inspector expressed that his office is understaffed. Although he and his staff members would like to actively inspect and enforce the codes, the office does not have the capabilities to do so, as they receive an overwhelming number of complaints. In addition, the inspector informed me that Providence is trying to revise the housing code, which has not been revised since 1956. Currently, he and other officers are in the process of reviewing the standards put forth by the state, the standards put forth by the city, and the various national property maintenance standards in order to see where the deficiencies are within the Providence code and what needs to be revamped in order to promote better sanitary and property maintenance.<sup>637</sup>

### **D. Sanitary Code Analysis**

Although all three municipalities have fairly general codes, it appears as though Providence and Warwick have similar standards while Newport falls slightly short. From the discussions with the housing inspectors, it appears as though in all three municipalities, there is not enough manpower to be proactive in inspections. In addition, it appears as though the inspectors have not been able to make the connection that mold, vectors, and vermin trigger asthma attacks, which could become clearer with asthma training. Although some of the sections of the local housing codes are almost on par with the ARC and EPA guidelines, the majority of the local housing codes are clearly deficient in comparison, as they are minimum standards which barely address the materials to be used to maintain a dwelling in conditions that are safe

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<sup>637</sup> The inspector did mention that in terms of the Providence Housing Code and the State Housing Code, the stricter code would be used in terms of enforcement.

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and sanitary. However, ARC and EPA guidelines may be too strict for the local councils to adopt and for the local housing inspectors to enforce. ARC will want to review these issues when working with the relevant parties of Rhode Island.

### **IV. Conclusion**

The State Building Code addresses the ARC and EPA guidelines more adequately than the local Minimum Housing Codes. The State Building Code is enforced by local building inspectors and officials, while the housing codes are enforced by local housing inspectors/enforcement officers. Neither group has sufficient manpower to enforce full compliance with the codes. The State Building Code is undermined by several factors. The “housing crisis” or shortage of affordable housing in Rhode Island, landlords and owners who do not apply for permits, and tenants who are fearful of reporting substandard conditions because they are in desperate need of housing all undermine the building inspectors’ ability to enforce the code. From the legislative end, the inspectors’ work is undermined by a lengthy and involved code adoption process that has left the inspectors with a less stringent code than is available. The local Minimum Housing Codes are undermined by the lack of manpower to sufficiently be proactive in inspections, the fact that the codes are only at minimum standards which do not address sanitary and health issues in detail, and the lack of knowledge that substandard housing conditions could trigger asthma attacks. ARC will want to address each of these factors.

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## VIII. VERMONT

### **Introduction**

Vermont is a small state with a small population, but it is not immune to housing problems facing larger states and urban areas. Recent studies show that more than 27 percent of lower income rental households are in substandard units.<sup>638</sup> In a random testing of units encompassing all income levels, 66% units lacked minimum safety features which were judged to create substantial risk to occupants.<sup>639</sup> In general, Vermont housing, which is the second oldest in the nation, is facing present and future safety and habitability issues. To make matters worse, there is also a short supply of rental property and homes for sale in Vermont, with the average costs of homes and monthly rent on the rise.<sup>640</sup>

In addition to a housing shortage, the Green Mountain state is also facing an asthma problem. Growing awareness of asthma has led to the creation of the Vermont Asthma Prevention Plan - 2003 written by the Vermont Department of Health. According to the plan, 17 percent of households have reported that at least one child was diagnosed with asthma.<sup>641</sup> While the number of instances of asthma related hospitalizations is on the decline, the number of low income adults age 25-64 who are affected is over two times greater than that of middle and high income Vermonters.<sup>642</sup> As of 2000, the number of deaths is on the rise, with the state average being higher than the national average.<sup>643</sup> The cost of asthma related hospital visits in 1999 was 2.1 million dollars.<sup>644</sup>

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<sup>638</sup> Rental Housing Health Code Enforcement Subcommittee, *State Rental Housing Registry Design* (December 12, 2000), pg. 6

<sup>639</sup> *Id.*

<sup>640</sup> Vermont Housing Council and Vermont Housing Awareness Campaign, *Between a Rock and Hard Place: Housing and Wages in Vermont* (February 2004), pg. 2

<sup>641</sup> Vermont Department of Health, *VT Asthma Prevention Plan – 2003* (2003) pg. 2

<sup>642</sup> Vermont Department of Health, *Health Status Report 2002*, (June 2002) pg. 37

<sup>643</sup> *Id.*

<sup>644</sup> *VT Asthma Prevention Plan – 2003*, pg. 6

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## Municipality Demographics

For the purposes of this project, we selected the city of Burlington, the town of Manchester, and the town of Rutland for specific data analysis. Burlington has the largest population in the state of Vermont, at 38,889 according to the 2000 US Census.<sup>645</sup> The city of Burlington claims to be diverse, with 7.7 percent of its population identifying themselves as non-white – a statistic which includes 2.7 percent Asian, 1.8 percent Black or African American, and 1.4 percent Hispanic or Latino.<sup>646</sup> Of 16,395 total housing units, it had a rental vacancy rate of 1.6 percent.<sup>647</sup>

As of the same 2000 US Census, the town of Manchester had a population of 2,065, with only 0.24 percent Black or African American, 0.19 percent Asian, but 1.6 percent Hispanic or Latino.<sup>648</sup> Of 1,158 total housing units, it had a rental vacancy rate of 3.9 percent.<sup>649</sup>

The town of Rutland also reports its year 2000 statistics as a total population of 4,038 with 0.4 percent Black or African American, 0.3 percent Asian, and 0.7 percent Hispanic or Latino.<sup>650</sup> Rutland had 1,761 total housing units and a rental vacancy rate of 2.5 percent.<sup>651</sup>

## Vermont Asthma Program

The Vermont Department of Health has implemented a comprehensive Asthma Program, whose mission is “to connect people to information about asthma and to work with other organizations to improve the quality of asthma prevention and management in Vermont.”<sup>652</sup> The program objectives are to achieve the asthma-related goals as laid out in Healthy Vermonters 2010, which are recognizing asthma and managing asthma through “patient education ...

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<sup>645</sup> <http://www.ci.burlington.vt.us/planning/mdp/profile.pdf> (accessed 3-17-04).

<sup>646</sup> <http://www.burlingtonvt.areaconnect.com/statistics.htm> (accessed 3-17-04).

<sup>647</sup> *Id.*

<sup>648</sup> <http://www.manchestervt.areaconnect.com/statistics.htm> (accessed 3-17-04).

<sup>649</sup> *Id.*

<sup>650</sup> <http://www.rutlandtown.com/demo2000.htm> (accessed 3-17-04).

<sup>651</sup> *Id.*

<sup>652</sup> Vermont Department of Health <<http://www.healthyvermonters.info/hs/epi/cdepi/asthma/asthma.shtml>>.

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avoiding allergens and irritants that trigger asthma episodes, taking appropriate medications, and working with a physician to ... monitor and control the disease.”<sup>653</sup> These goals are to be achieved by “establishing a tracking system [in order to] better understand the numbers and characteristics of Vermonters who have asthma”<sup>654</sup>; and “addressing the objectives of the Vermont Asthma Prevention Plan 2003 to improve asthma prevention and care.”<sup>655</sup>

Under the Asthma Program, Vermont has implemented several local initiatives conducted in conjunction with the American Lung Association of Vermont. These initiatives include “Asthma Saturday”, an educational program for families with asthmatic children between the ages of seven and twelve; “Champ Camp”, a week-long camp program for children between the ages of eight and twelve with moderate to severe asthma that incorporates asthma education with a safe environment where children can learn that living with asthma does not mean they cannot live active lives; “Open Airways”, a school-based education program for children between the ages of eight and eleven; and an annual “Walk for Asthma” to increase awareness and raise funds to support asthma programs.<sup>656</sup> In addition, the Springfield District Asthma Committee was established in the spring of 2002 to provide asthma education programs for asthmatic children and their families, and to foster communication between school nurses, health care providers and families to improve asthma management.<sup>657</sup> Also in 2002, the Rutland Regional Medical Center Asthma Management Clinic was opened, with Respiratory Therapists available 24 hours a day, 7 days a week.<sup>658</sup>

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<sup>653</sup> Healthy Vermonters 2010: Vermont’s Blueprint for Improving Public Health, September 2000, p. 42.

<sup>654</sup> Vermont Department of Health <<http://www.healthyvermonters.info/hs/epi/cdepi/asthma/asthma.shtml>>.

<sup>655</sup> *Id.*

<sup>656</sup> Vermont Department of Health <<http://www.healthyvermonters.info/hs/epi/cdepi/asthma/initiatives.shtml>>.

<sup>657</sup> *Id.*

<sup>658</sup> *Id.*

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It is the goal of the Department of Public Health that in promoting asthma awareness they can reduce people's exposure to asthma triggers.<sup>659</sup> The Department of Health shares ARC's view that one way of reducing the triggers is to examine the health effects of building technologies. This makes Vermont a potentially very receptive partner for asthma awareness and training programs.

### **Building Code**

When constructing or renovating a public building, an owner must get a local permit and a state permit which are obtained through the Department of Labor and Industry.<sup>660</sup> All projects which receive permits must conform to the Vermont State Building Code, and will be inspected as such. The State Building Code is actually a compilation of code books. The current codes adopted by Vermont as the State Code are: 1996 BOCA National Building Code; 1997 National Fire Protection Association (NFPA), 101 Safety Code; 1990 BOCA National Plumbing Code; 1996 NFPA 54 Natural Gas Code; 2002 National Electric Code; and, 1996 International Mechanical Code. Together these codes provide the framework for building a structure in Vermont. The codes deal with both broad issues that influence overall design, as well as things as specific as the type of nail to use when hanging drywall.

One downside to the collection of codes used in Vermont is that they are somewhat dated, with the oldest being fourteen years old. Recently, there has been a shift away from building tight, efficient, heating and cooling homes to building efficient homes that also breathe. The codes used in Vermont predate this shift and thus may be lacking some of the relevant ventilation provisions that have improved newer codes.

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<sup>659</sup> *Id.* pg. 6

<sup>660</sup> Vermont Department of Labor and Industry, A guide to Building, Construction and Occupancy Permits in Vermont, <http://www.state.vt.us/labind/fbrochure/brochure.htm>, (accessed March 8, 2004)

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## **Vermont State Structure**

The Department of Labor and Industry is responsible for managing building inspections in Vermont. The Fire Prevention Division oversees the inspection process and building codes. As in other New England states, the Vermont building inspection is thus rooted in fire prevention. The statute Building Inspectors and Regulation of Building allows for municipal officials of each municipality to:

establish codes and regulations for the construction, maintenance, repair, and alteration of buildings and other structures within the municipality. Such codes and regulations may include provisions relating to building materials, structural design... and such matters as may be reasonably necessary for the health, safety and welfare of the public...<sup>661</sup>

## **Inspection Process**

The inspection process for construction and renovation of public buildings begins with the permit and ends with the Certificate of Occupancy. A Certificate of Occupancy is granted when the construction is completed and every area requiring inspection has been approved by an inspector. During the period of construction, it is the job of the inspector to oversee the construction of the building to ensure that all the necessary steps are taken so that the project is built to code. The process is similar with local permits in jurisdictions that have a building code in place. In cases where there is a state and local permit, two inspectors check the property. Sometimes there is an overlap between inspections, but in municipalities such as Manchester, one inspector is examining the buildings compliance with the state building code, while the other is checking the building for compliance with the local zoning regulations and that to ensure that the building being built was the one requested in the original building permit.

When a violation occurs, both the local and state authorities have the power to impose fines and, if necessary, put a stop to the construction. Violations are usually found during

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<sup>661</sup> VT. Stat. Ann. Tit. 24 § 3101

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routine inspections of the property. Most inspectors will require inspections to be conducted in steps so that they are guaranteed an opportunity to correct any problems before it is too late. An example of this stepped approach is when contractors are not allowed to hang drywall until the plumbing and electrical elements pass inspection. When a violation occurs, the builder is traditionally given the opportunity to fix the problem unless the violation is related to failure to obtain a permit, in which case a fine and a cease and desist order are traditionally imposed. Some towns have done away with separate local and state inspections by working with the Department of Labor and Industry and joining the Cooperative Municipal Inspection Agreement, which allows the local inspectors to perform both the state and local inspections. Burlington is one of the towns participating in this program. According to James Simonds, a Rutland Building Inspector, Rutland is also interested in joining the program but they have some issues regarding the inspection of the many old buildings that need to be resolved first.<sup>662</sup> Combining local and state inspection efforts will be likely to be a more efficient use of resources than the current system in Rutland. As organizational enforcement changes take effect, the resources may be used elsewhere to improve other aspects of building inspections.

The codes adopted by Vermont are limited in their application. Generally speaking, the codes are only used in securing a state permit. State permits are only required for public buildings or when hooking into a public water or sewer line. 21 V.S.A § 251(a) defines

public building [as] buildings owned or occupied by public utilities, hospitals, schools...; cooperatives and condominiums; buildings in which people rent accommodations, whether overnight or for a longer term;... Use of any portion of a building in a manner described in this subsection shall make the entire building a “public building” for purposes of this subsection.<sup>663</sup>

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<sup>662</sup> Telephone conference with James P. Simonds, Rutland Building Inspector and Zoning Administrator February 2004

<sup>663</sup> Department of Labor and Industry, *Vermont Fire Prevention and Building Code – 1999* (Amended January 2003) Appendix VI

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A “public building” is not “an owner-occupied single family residence, unless used for a purpose described in subsection(a) of this section.”<sup>664</sup> Upon first glance, it would appear that an owner or future owner of a single family residence is free to build whatever he wishes as long as it satisfies the local zoning ordinance; but Chapter 83 § 3101(f) states that “On or before January 1, 1984 each municipality has in effect a building code which is not consistent with the rules and standards adopted by the Commission of Labor and Industry, shall substitute for such a code which is consistent.” So there is a freedom to build single family residences free of a code structure in towns that have failed to adopt a code.

Burlington and Rutland have adopted the 1996 BOCA National Building Code and supporting plumbing and mechanical codes for all buildings. Manchester does not have a municipal building code and does not inspect single family dwellings for compliance with the state code. The local inspection process in Manchester is focused on insuring that the completed permitted structures are the same size, shape, height and location of what was applied for in the building permit application. If the completed building passes this requirement, a Certificate of Occupancy is granted. According to a contractor with experience in Manchester, the certificate sometimes is granted without a final inspection.

### **Energy Codes**

In addition to the building codes, the State of Vermont Department of Public Service (“DPS”) has a Vermont Residential Energy Code (“Residential Energy Code”) and Vermont Guidelines for Energy Efficient Commercial Construction (“Commercial Energy Code”).

**101.2 Intent.** [The Residential]code shall regulate the design of building envelopes for adequate thermal resistance and low air leakage and the design and selection of mechanical, ventilation, electrical, service water-heating and illumination systems and equipment which will enable effective use of energy in new residential building construction... permit the use of innovative approaches and techniques to achieve

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<sup>664</sup> *Id.*

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effective utilization of energy... not intended to abridge safety, health or environmental requirements under other applicable codes or ordinances.<sup>665</sup>

Unlike the building codes, which require local or state inspection, the Energy Codes are certified by a “builder who directed construction or of another party authorized to certify Code compliance.”<sup>666</sup> The Residential Energy Code “sets forth minimum requirements for the design of new residential buildings, and the construction of residential additions.”<sup>667</sup> The Commercial Energy Code borrows heavily from the International Energy Conservation Code (IECC) 2000 published by the International Code Council, Inc. The DPS amended this model code to be more considerate of the climate, administration and other traits specific to Vermont.<sup>668</sup> While the list of required requirements is longer for the Commercial Energy Code, the certification process is similar to that of the Residential Energy code in that the builder is ultimately responsible for certifying compliance. The Commercial Energy Code guidelines are applicable to multi-family residential buildings of four or more stories.<sup>669</sup>

Unlike the Residential Energy Code, compliance with the Commercial Energy Code is optional unless it is required by the town or by Act 250. According to Chris Owen, an employee of the DPS, Vermont, like most New England states, is anti-regulation when it comes to building regulation.<sup>670</sup> However, Vermont has used various tools to encourage compliance with the Commercial Energy Code. For example, Mr. Owen stated that Vermont requires energy efficiency standards for all public buildings, because it ties compliance with these standards to

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<sup>665</sup> International Code Council, *2003 Vermont Residential Building Energy Standard* (May 2003) ,§ 101.2 Intent

<sup>666</sup> Vermont Department of Public Service, *Instructions for completing the 1997 VT Residential Building Energy Standards Certificate and The Vermont Owner/Builder Disclosure Statement*. NOTE: One weakness of the Residential Energy Code is that it does not apply to manufactured and mobile homes.

<sup>667</sup> *2003 Vermont Residential Building Energy Standard*,§ 101.2 Intent

<sup>668</sup> Vermont Department of Public Service, *2001 Vermont Guidelines for Energy Efficient Commercial Construction* (October 2001) pg. 1

<sup>669</sup> *Id.* pg. 8

<sup>670</sup> Telephone conversation with Chris Owen, Vermont Department of Public Service, March 17, 2004

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public funding through ACT 250. Mr. Owen stated that he believed that this requirement covers about two thirds of all new commercial buildings in Vermont.<sup>671</sup> So far, Burlington is the only municipality in Vermont to adopt the energy standard for all commercial buildings in its jurisdiction. The motivation for Vermont's adoption of the energy code is furtherance of the healthy homes with an attention to indoor air quality. While asthma was not a direct motivating factor, it was the belief of the interviewees that asthma, and other lung and respiratory diseases, were a concern in the framing and adoption of the code.

### ARC & EPA Guidelines Comparison

In comparing the ARC and EPA Guidelines against the relevant building, plumbing and mechanical codes, it is apparent that many of the issues in the ARC/EPA Guidelines are covered or addressed in the codes. One problem with comparing the Codes to the guidelines is that the language and organization of the two are very different. For example, EPA and ARC Guidelines for flashing are an example where there language matches very well with the language of the Codes.<sup>672</sup> In contrast, ARC's guideline of avoiding plumbing in exterior walls, is very different than the way this issue is addressed in the Code. ARC recommends that plumbing should be placed in interior walls because "it is easier to detect and repair leaks in interior walls"<sup>673</sup>. The plumbing code addresses the issue of locating plumbing in exterior walls, but with a concern for freezing instead. If plumbing is placed in interior walls, the Code requires that adequate measures be taken to prohibit freezing pipes. This is an example of where the recommended provisions are quite similar, but the underlying concern is different.<sup>674</sup>

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<sup>671</sup> *Id.*

<sup>672</sup> See the Vermont Building Code Chart in the Appendix

<sup>673</sup> The Asthma Regional Council, *Building guidance for Healthy Homes* (April 4, 2002)

<sup>674</sup> Another issue with the ARC guidelines is whether they can realistically be implemented. Prohibiting plumbing in exterior walls when there is traditionally baseboard heat running along the walls and under windows that face the

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There are also situations where the building codes completely fail to address an issue. For example, while ARC specifies where in a building air handlers should be located, the building and mechanical codes do not say anything on this subject. However, while the provision is not there ARC's underlying concern, restricting air leakage from duct, is addressed to some degree by the Residential Energy Code. Chapter 5 deals with building envelope requirements.

**502.1.4.2 Caulking and sealants.** Exterior joints, seams or penetrations in the building envelope, that are sources of air leakage, shall be sealed with durable caulking materials, closed with gasketing systems, taped or covered with moisture vapor-permeable wrapping material. Sealing materials spanning joints between dissimilar construction materials shall allow for differential expansion and contraction of the construction materials. This includes sealing around tubs and showers, at the attic and crawl space panels, at recessed lights and around all plumbing and electrical penetrations. These are openings located in the building envelope between conditioned and unconditioned space or between the conditioned space and the outside.<sup>675</sup>

Thus the Vermont Residential Energy Code, if followed, would reduce air leakage from ducts and other areas where air might pass.

Often the Building Code and the ARC and EPA Guidelines require similar restrictions and precautions recommend with varying methods by which to accomplish these goals. An example is ARC's guideline regarding the installation of hot water heaters which states, "Install hot water heaters in rooms with drains or catch pans and floor coverings that are not water sensitive."<sup>676</sup> The Building Code does not specify the kind of floor covering necessary because it contains a provisions for avoiding leakage onto floors:

504.7 Required pan. Where water heaters or hot water storage tanks are installed in locations where leakage of the tanks or connections will cause damage, the tank or water

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outside could create a hardship for the homeowner or builder who now has to find a way to get the plumbing to the exterior wall without running it up that wall.

<sup>675</sup> International Code Council and Vermont Department of Public Service, *Vermont Residential Energy Standard*, § 502.1.4.2, (2003)

<sup>676</sup> The Asthma Regional Council, *Building guidance for Healthy Homes* (April 4, 2002)

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heater shall be installed in a galvanized steel pan having a minimum thickness of 24 gage, or other pans approved for such use.<sup>677</sup>

Thus, both provisions attempt to limit water damage in different ways. While the ARC guideline appears stronger in limiting any possibility of water damage to floors, it may also have the negative effect of limiting possible areas to install the water heater which would be just as safe from causing damage to water sensitive materials when installed with a steel pan.

### **Enforcement**

Given the parallels between the Code and the EPA and ARC recommendations, it appears that enforcement of the Code is the bigger problem. The Cities of Rutland and Burlington both follow the state mandated BOCA standards discussed above. Both John Rasys, Burlington Building Inspector, and James P. Simonds, Rutland Building Inspector, claim that the building code is enforced for all buildings in their municipalities, but the extent of the enforcement is unclear.

The Town of Manchester does not have a local building code. This means that the only requirement for building a single family home in Manchester is that it meets all of the towns zoning requirements and that smoke detectors be installed. This poses a potentially serious health risk to residents of Manchester. Moreover, since Manchester is a ski town, a large number of the single family residential homes built then become rental properties. (Inspection and enforcement in rental properties are discussed in the Sanitation section.) Without an inspection or enforcement structure there is simply no way to ensure that owners or renters are occupying safe homes.

As discussed above, implementation of the Residential and Commercial Energy Codes is primarily done on the word of building contractors; however, the state of Vermont has utilized

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<sup>677</sup> International Code Council, *2000 International Plumbing Code*, § 504.7

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another creative way to urge Energy Code enforcement. The DPS has enlisted realtors, bankers, building professionals and real estate attorneys to help promote the enforcement of the Energy Codes. According to the DPS, this solution is effective because these individuals deal with a lot of home transactions a year and they will traditionally bring up the Residential Energy Code when drawing up contracts for sale.<sup>678</sup> The DPS has done the same for with the Commercial Energy Code encourage developers to voluntarily comply with the regulations.

Regulation and inspection of public buildings is another somewhat separate enforcement structure. According to a Vermont State Fire Marshal, there are limited resources for routine inspection of public buildings. Unsolicited inspections typically occur when a complaint is filed or if there are obvious issues with a building. The Marshall did say that there are occasions where someone is flamboyantly breaking the rules. In those situations the Fire Marshal will punish the owner to the full extent of the law as deterrence to other land owners. However, it should be noted that because building inspection in Vermont happen through the Fire Marshall, this office usually comes in when the violation is fire-safety related.

### **Building Conclusion**

The net result of this research is that for new construction and renovations, many of the ARC and EPA guidelines are satisfied by the combination of the Building Code and the Residential and Commercial Energy Codes. As previously mentioned, the real problems thus seem to be the lack of education and enforcement. The inspectors need to be educated on all of the requirements they should be enforcing. On the same note, owners, landlords and builders also should be held accountable for learning about the requirements for building healthier homes. While increased enforcement would be beneficial in helping to promote and secure future healthy buildings, it will have a limited impact on pre-existing homes. These homes will

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continue to contain Code violations and potential health threats until owners and landlords are required to bring old homes up to current standards. In order to be effective, this requirement must have power to change the current system of “grandfathering in” older homes. As it stands today these “grandfather” clauses mean that while installing a bathroom in a new home without an exhaust fan is forbidden, a bathroom that was built without a fan before it was required is acceptable. In a state like Vermont where so much of the housing stock is old, this presents a significant problem. The downside of this change would be that it would probably lead to higher rental costs as the cost of bringing the house to code is shifted to the renter.

### **Sanitation Code Overall State Statutes**

Statutory regulations concerning public health for the state of Vermont are codified in Title 18 and Title 24 of the Vermont Statutes.<sup>679</sup> Title 18, §§ 101 through 131 and 601 through 624 are administrative in nature and outline the appointment and responsibilities of the State Board of Health and local health officials. Title 24, §§ 4001 through 4027 concern Housing Authorities, most of which is administrative with one section seemingly on point; and Title 24, §§ 5001 through 5010 concern Municipal Housing Codes. The Vermont Rental Housing Health Code, located in Chapter 5, Subchapter 16 of the Vermont Health Regulations seems to be the most pertinent to regulation of asthma triggers.

### **Title 18**

18 V.S.A § 101 establishes a State Board of Health. § 101(a) mandates that the State Board consist of seven members who are appointed by the governor, with the advice and consent of the senate, for terms of six years.<sup>680</sup> This State Board of Health is responsible for the supervision and direction of the execution of all laws vested in the Department of Health;

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<sup>679</sup> Vt. Stat. Ann. tit.18 and Vt. Stat. Ann. tit. 24.

<sup>680</sup> Vt. Stat. Ann. tit 18 § 101(a).

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formulation and carrying out of all policies relating thereto; and making and promulgating rules and regulations necessary to administration of Title 18. The board's authority in making and promulgating rules and regulations extends to all matters relating to the preservation of the public health.<sup>681</sup>

Several sections of Title 18 indicate that Vermont is extremely supportive of significant measures to ensure the health of its citizens. 18 V.S.A. § 107(a) states that the Commissioner of the Board of Health (see § 104) “shall take cognizance of the interest of the life and health of the inhabitants of the state, shall make or cause to be made inspections, investigations and inquiries respecting causes of disease and the means of preventing the same”.<sup>682</sup> § 107 (b) states that “a health officer may conduct inspections to detect violations of any state or local health statute, rule, ordinance or permit, or any public health hazard or public health risk.”<sup>683</sup> § 115(b)(1) states that the Board of Health is authorized to “study the prevalence of chronic disease”<sup>684</sup>; and § 115(b)(4) states that the Board of Health is also authorized to “develop and carry on an educational program as to the causes, prevention and alleviation of chronic disease”.<sup>685</sup>

According to 18 V.S.A. § 126, the Commissioner or selectmen may issue an order to prevent, remove or destroy any public health hazard; mitigate a significant public health risk; correct any violation of Title 18 and rules promulgated thereunder; or correct any violation of a permit restriction or requirement.<sup>686</sup> Additionally, violations of state or local health statute, rule, ordinance or permit can be enforced both civilly and criminally.<sup>687</sup> 18 V.S.A. § 121 allows for the issuance of search warrants for health or law enforcement officers to search premises where

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<sup>681</sup> Vt. Stat. Ann. tit. 18 § 102.

<sup>682</sup> Vt. Stat. Ann. tit. 18 § 107(a).

<sup>683</sup> Vt. Stat. Ann. tit. 18 § 107(b).

<sup>684</sup> Vt. Stat. Ann. tit. 18 § 115(b)(1).

<sup>685</sup> Vt. Stat. Ann. tit. 18 § 115(b)(4).

<sup>686</sup> Vt. Stat. Ann. tit. 18 § 126(a)(1) through (4).

<sup>687</sup> *see* Vt. Stat. Ann. tit. 18 § 130 and Vt. Stat. Ann. tit. 18 § 131.

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they have reason to believe that a statute, rule, ordinance or permit is being violated or a public health hazard or risk may exist.<sup>688</sup> 18 V.S.A. § 131(b) allows for criminal penalty up to a fine of \$25,000.00 and six months imprisonment for knowingly creating a public health hazard or contributing to a significant public health risk.<sup>689</sup>

18 V.S.A. § 601 (a) establishes local health officers appointed by the Commissioner for each town or city.<sup>690</sup> These local health officers may conduct investigations regarding conditions that may be public health hazards<sup>691</sup> and may “prevent, remove, or destroy any public health hazard or mitigate any significant public health risk”<sup>692</sup>. Pursuant to § 602(b), they shall also notify the division of environmental health of any violation or public health hazard or risk within 48 hours of discovery and of any action taken.<sup>693</sup>

### Title 24

According to Title 24, each municipality may establish a housing authority if “unsanitary or unsafe dwelling accommodations exist in such municipality”<sup>694</sup> or “there is a shortage of safe or sanitary dwelling accommodations in such municipality available to persons of low income”<sup>695</sup>. It further states that in determining whether accommodations are safe or sanitary, the authority may consider, *inter alia*, “the light, air, space and access available to the inhabitants ... the sanitary facilities and the extent to which conditions exist in such buildings which endanger life or property by fire or other causes.”<sup>696</sup>

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<sup>688</sup> Vt. Stat. Ann. tit. 18 § 121.

<sup>689</sup> Vt. Stat. Ann. tit. 18 § 131(b).

<sup>690</sup> Vt. Stat. Ann. tit. 18 § 601.

<sup>691</sup> Vt. Stat. Ann. tit. 18 § 602(a)(1).

<sup>692</sup> Vt. Stat. Ann. tit. 18 § 602(a)(3).

<sup>693</sup> Vt. Stat. Ann. tit. 18 § 602(b).

<sup>694</sup> Vt. Stat. Ann. tit. 24 § 4003.

<sup>695</sup> *Id.*

<sup>696</sup> *Id.*

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24 V.S.A. § 5003(a) states that municipalities may adopt their own ordinances for the establishment and enforcement of minimum standards for dwellings in order to make “dwellings and dwelling premises safe, sanitary and fit for human habitation”<sup>697</sup>. These ordinances may include minimum standards with respect to, *inter alia*, “elimination and prevention of insect and vermin infestation”<sup>698</sup>. They may also include minimum standards with respect to ventilation<sup>699</sup> and “provisions relating to weather-tight and rodent-proof foundations, floors, walls, ceilings, roofs, windows and doors”<sup>700</sup>. Under municipal ordinances, penalties for violation are not to exceed a fine of \$200.00 or thirty day imprisonment or both.<sup>701</sup>

All three of the municipalities researched for this project have adopted local ordinances pursuant to 24 V.S.A. § 5003(a). However, none of the persons interviewed in any of the municipalities mentioned working with a local housing authority at all. Although the Burlington Housing Authority was established in 1961, making it the oldest as well as the largest municipal housing authority in Vermont<sup>702</sup>, none of the persons interviewed from the Burlington Department of Code Enforcement explicitly mentioned any overlap between the two offices. The mission of the Burlington Housing Authority is “to promote, provide and preserve affordable housing in ways that encourage resident self-sufficiency and support healthy neighborhoods.”<sup>703</sup> Through funding received from the U.S. Department of Housing and Urban Development (HUD), the Burlington Housing Authority manages over 500 affordable apartments and provides rental assistance to over 1,700 families.<sup>704</sup> The Burlington Code Enforcement Officer who was interviewed did say that they try to keep inspections consistent

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<sup>697</sup> Vt. Stat. Ann. tit. 24 § 5003(a).

<sup>698</sup> Vt. Stat. Ann. tit. 24 § 5003(c)(1).

<sup>699</sup> Vt. Stat. Ann. tit. 24 § 5003(c)(2).

<sup>700</sup> Vt. Stat. Ann. tit. 24 § 5003(c)(3).

<sup>701</sup> Vt. Stat. Ann. tit. 24 § 5007.

<sup>702</sup> Burlington Housing Authority, <http://www.burlingtonhousing.org/> (Accessed 03-28-04).

<sup>703</sup> *Id.*

<sup>704</sup> *Id.*

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across socio-economic lines, but “more of our units are low and middle income”.<sup>705</sup> At first glance, this may seem to indicate that there is some overlap in inspection of low income housing. However, it appears that housing provided by the Burlington Housing Authority is subject to HUD Housing Quality Standards rather than municipal ordinances.<sup>706</sup> Additionally, the Burlington Housing Authority seems to employ its own housing inspectors to determine whether the property meets HUD standards, and appears to have two inspectors on staff, both of whom work part-time.<sup>707</sup> Due to the time constraints of this project, however, federally funded public housing was not included in the analysis.

### Vermont Rental Housing Health Code

The Vermont Rental Housing Health Code establishes narrower regulations than Title 24. This code applies “to all rented dwelling units in the State of Vermont other than lodging facilities licensed by the Department of Health.”<sup>708</sup> However, if a municipality has adopted a housing code “at least as effective as” the Vermont Rental Housing Health Code, it may request an exemption from the Vermont Board of Health.<sup>709</sup> The code specifically mandates that the owner of rental housing shall provide every habitable room with at least one window facing directly outside which can be opened, or equivalent ventilation.<sup>710</sup> Additionally, every bathroom shall have direct access to external air ventilation<sup>711</sup> and every public hall and stairway shall be “adequately ventilated.”<sup>712</sup> Overall, the Vermont Rental Housing Health Code is not as comprehensive or specific about ventilation as the ARC and EPA guidelines. For instance, both

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<sup>705</sup> Correspondence with Code Enforcement Officer, Burlington, VT, March 23, 2004.

<sup>706</sup> Burlington Housing Authority, <http://www.burlingtonhousing.org/article/articleview/1709/1/102/> (Accessed 03-28-04).

<sup>707</sup> Burlington Housing Authority, <http://burlingtonhousing.org/article/articleview/1624/1/292/> (Accessed 03-28-04).

<sup>708</sup> Vermont Health Regulations, Chapter 5, Subchapter 16.

<sup>709</sup> *Id.*

<sup>710</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Section 2.1(a).

<sup>711</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Section 2.1(b).

<sup>712</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Section 2.1(c).

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the ARC and EPA suggest fans above cook tops in addition to fans in bathrooms. The Vermont code requires either window ventilation or fans in bathrooms, and requires only that cooking equipment be vented “if appropriate”, but does not define “appropriate”.

In regards to moisture the Vermont Rental Housing Code specifically states that “every bathroom floor surface shall be constructed so as to be impervious to water and easily cleanable.”<sup>713</sup> While this is a good provision, it does not address other moisture issues that might arise from leaking around the tub and sink areas.

The Code further mandates that every foundation, exterior wall, exterior roof, floor, interior wall, ceiling, window, exterior door, and basement or cellar door and hatchway should be rodent-proof.<sup>714</sup> Further, it is the owner’s responsibility to keep shared or public areas “free from all rats, and reasonably free from insects, vermin and other pests”.<sup>715</sup> The owner shall also be responsible for extermination of insects, rats, vermin, or other pests from shared or public areas.<sup>716</sup> Additionally, if the insect, rodent, vermin, or other pest infestation is caused by the owner’s failure to maintain the dwelling, or if the infestation exists in two or more units, the owner shall be responsible for the extermination.<sup>717</sup> These rodent-proofing provisions are generally in compliance with ARC and EPA guidelines, though the wording again is rather vague as there is neither a definition for what “reasonably free” means nor any explanation for why rats warrant the word “free” but insects, vermin and other pests must only be “reasonably free”.

The code also provides that the Local Board of Health and Local Health Officer are responsible for enforcing the Rental Housing Health Code by conducting inspections “whenever

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<sup>713</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Section 3.5.

<sup>714</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Sections 3.1 through 3.3.

<sup>715</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Section 5.2(a).

<sup>716</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Section 5.2(b).

<sup>717</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Section 5.2(c).

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they are informed or have reason to believe that any provision ... is being violated”<sup>718</sup> and by issuing orders to the “owner or occupant, as appropriate, to comply with the violated provisions of the regulation within a reasonable period of time.”<sup>719</sup> However, it is interesting to note that the provision in the code that concerns penalties for violations points to several sections of the Vermont State Statutes, all of which have been repealed. It would appear that there is currently no valid provision which provides a guideline for penalties under the Vermont Rental Housing Health Code.<sup>720</sup> However, the Vermont State Statutes regarding civil and criminal penalties still apply. Additionally, Vermont provides tenants with a statutory right of action for violation of the implied warranty of habitability, which says that premises shall be “safe, clean and fit for human habitation and ... comply with the requirements of applicable building, housing and health regulations.”<sup>721</sup> In the event that the landlord fails to meet the warranty of habitability, if the landlord has previously received notice of the violation from the tenant, the tenant may withhold the payment of rent; obtain injunctive relief; recover damages, costs and reasonable attorney’s fees; and terminate the rental agreement with reasonable notice.<sup>722</sup>

In addition to the statewide Rental Housing Health Code, the Vermont Department of Health website also provides fact sheets which contain suggestions for how to reduce exposure to asthma triggers such as mold and poor indoor air quality. The indoor air quality fact sheet suggests increasing ventilation by opening doors and windows to the outside, installing exhaust fans in bathrooms and kitchens, and properly maintaining air filter systems.<sup>723</sup> Additionally, it suggests keeping the home in good repair by preventing or repairing roof, pipe, and basement

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<sup>718</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Sections 9.1 and 9.2.

<sup>719</sup> Vermont Health Regulations, Chapter 5, Subchapter 16, Section 9.3.

<sup>720</sup> *see* Vermont Health Regulations, Chapter 5, Subchapter 16, Section 9.5.

<sup>721</sup> Vt. Stat. Ann. tit. 9 § 4457.

<sup>722</sup> Vt. Stat. Ann. tit. 9 § 4458.

<sup>723</sup> Vermont Department of Health, Fact Sheet on Air Quality in Homes  
<http://www.healthyvermonters.info/hp/airquality/airhome.shtml> (accessed 02-23-04).

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leaks; preventing or reducing mold growth and spread of mold spores by venting the clothes dryer, the bathroom, and the area by the kitchen stove to the outside; keeping the home warm enough to prevent moisture buildup and condensation; properly insulating; and monitoring indoor relative humidity during the winter, not allowing it to go over 50 percent.<sup>724</sup>

The mold fact sheet suggests that the first and most important step in reducing the chance of mold growth is to stop any water from entering the home where it should not be.<sup>725</sup> Again, it suggests fixing leaking roofs and broken or leaky pipes and venting the clothes dryer, bathroom and kitchen fans to the outdoors.<sup>726</sup> Although not codified as state law, these suggestions are consistent with those made in the ARC Healthy Homes Guidelines and the EPA IAQ Specifications regarding ventilation. These fact sheets certainly indicate that Vermont's Department of Health is aware of these issues and is pursuing means of educating Vermonters on these issues. Unfortunately as of right now, codes do not reflect that knowledge and therefore many of these concerns may not be enforced in housing, or if enforced may not be enforced equally across the state.

In order to have greater enforcement in rentals, a bill was recently introduced to the Legislature on January 30, 2003. The bill currently in the house, H.0108, A Statewide Rental Housing Registry to Improve the Quality, Safety, and Habitability of Residential Rental Housing in Vermont, proposes creating a statewide registry is to have a system that will:

preserve and protect existing residential rental housing, promise uniform and responsive rental housing code inspection, improve safety and habitability of rental housing through education and training for property owners and tenants, develop technical assistance and financial resources to support property owners in their ownership responsibility to

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<sup>724</sup> *Id.*

<sup>725</sup> Vermont Department of Health, Air Quality Fact Sheet on Mold <http://healthyvermonters.info/hp/airquality/mold.shtml> (accessed 02-23-04).

<sup>726</sup> *Id.*

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maintain rental properties in compliance with the state's rental housing health and life safety codes, and save lives.<sup>727</sup>

Since the properties affected by the bill are public, the inspection duties would still lie with the Department of Labor and Industry. The powers of the inspectors would be increased to include the enforcement of the residential rental housing health code which has been enforced by the Department of Health and local town health officers.<sup>728</sup> The Department of Health and local health officers will retain oversight of “water quality and surface sewage as they affect residential rental housing.”<sup>729</sup> If passed, the bill would be a big step forward in dealing with the substandard rental market in that it would add a mandatory program of oversight that includes continuing inspections to occur at the rate of no less than once every five years. Until the bill is passed, it is up to local health inspectors to enforce the Rental Housing Health Code.

### **Municipal Ordinances**

Both Burlington and Manchester have adopted municipal housing ordinances. A Burlington Code Enforcement Officer confirmed that Chapter 18 BOC relates to rental property and is what they use most often. He did also mention that the city code enforcement officers are also state health officers and can use the state rental codes (i.e., the Vermont Rental Housing Health Code) when needed, but he said that because the state codes “tend to be harder to enforce”, they generally focus on Chapter 18.

### **Burlington - Chapter 18 BOC**

Chapter 18, also referred to as the “Minimum Housing Standards Ordinance of the City of Burlington”, covers both building and sanitation aspects of housing. However, for a sanitation code analysis, the relevant section is Article III, Minimum Standards. In this section, § 18-72(a)

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<sup>727</sup> H.0108, 2003-2004 Vermont Legislature (January 30, 2003)(as introduced)

<sup>728</sup> Id.

<sup>729</sup> Id.

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mandates that “[f]loors shall be rodent-proof”<sup>730</sup>. Additionally, in § 18-79, it requires that “[s]upply lines, plumbing fixtures, vents and drains shall be connected and maintained in good working order and kept free from obstructions, leaks and defects”<sup>731</sup>, which could be interpreted as helping to prevent rodent infestation as well as to prevent buildup of moisture. Regarding ventilation, § 18-84 requires one window openable to the outdoors in each habitable room.<sup>732</sup> In bathrooms or toilet rooms, the code requires either “one window opening to the outdoors or a fan or mechanical device vented to the outdoors of sufficient size to prevent the buildup of moisture.”<sup>733</sup>

In comparison to the ARC and EPA guidelines, the standards set out in Chapter 18 are broader. For rodent-proofing standards, the ARC and EPA suggest specific measures that should be taken such as sealing, caulking, and rodent and corrosion proof screening materials. It seems that simply requiring rodent-proof floors may be too broad as to be easily enforceable or to be an effective means of rodent-proofing. § 18-72(a) also says that bathroom and kitchen floors shall be “substantially impervious to water”<sup>734</sup>; again, much more broadly stated than the ARC and EPA guidelines specifically stating that there be no carpet in those areas. Chapter 18 ventilation standards, mention having a fan or mechanical device in bathrooms. However, rather than requiring fans as the ARC and EPA suggest, the Burlington ordinance allows an openable window instead of a fan. Since Vermont housing is some of the oldest nationwide, it is unlikely that many of the buildings are equipped with bathroom fans or other mechanical devices. Having a window that can open as sole bathroom ventilation will probably not do much in the way of preventing moisture buildup, especially in the humid Vermont summers.

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<sup>730</sup> Chapter 18 BOC, § 18-72(a).

<sup>731</sup> Chapter 18 BOC, § 18-79.

<sup>732</sup> Chapter 18 BOC, § 18-84(a).

<sup>733</sup> Chapter 18 BOC, § 18-84(c).

<sup>734</sup> Chapter 18 BOC, § 18-72(a).

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According to the Assistant Director of Code Enforcement in Burlington, the typical cycle for inspections of rental units is once every three years, but inspections can also happen at the time of sale or be triggered by individual complaints.<sup>735</sup> A code enforcement officer in Burlington confirmed the typical three year inspection cycle, but admitted that it is a difficult target, saying, “We try to inspect every unit once in three to five years.”<sup>736</sup> He elaborated on the process by which these routine inspections happen, explaining that they are initiated by a letter sent by the Department of Code Enforcement to the owners of the units asking the owners to contact the Department for inspections.<sup>737</sup> He also said that their department also works closely with the City attorney and that they have the ability to “get into any unit when we want.”<sup>738</sup> Additionally, they are able to obtain search warrants to inspect the units, but, says the enforcement officer, “we don’t have to.”<sup>739</sup> Although he also confirmed that some of their inspections come from complaints, he said that most of their inspections are of the routine sort, triggered by the letters to the owners.<sup>740</sup> He believes that the policy to inspect each unit on a regular basis results in fewer complaints because this way, “we get units upgraded before tenants have to call to complain about their units.”<sup>741</sup>

In ranking a list of areas of concern for inspectors, the Burlington Code Enforcement Officer put fire safety first, followed by prevention/eradication of pests, prevention of respiratory problems/allergens, durability against moisture, ventilation, and finally energy efficiency.<sup>742</sup> He stated that he had received training about mold and different conditions that would cause health problems in the units; however, he had not had any training relating specifically to asthma,

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<sup>735</sup> Correspondence with Assistant Director of Code Enforcement, Burlington, VT, March 12, 2004.

<sup>736</sup> Correspondence with Code Enforcement Officer, Burlington, VT, March 23, 2004.

<sup>737</sup> *Id.*

<sup>738</sup> *Id.*

<sup>739</sup> *Id.*

<sup>740</sup> *Id.*

<sup>741</sup> *Id.*

<sup>742</sup> *Id.*

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saying that specific asthma-related issues “seem to go from doctors to other departments.”<sup>743</sup> He did say that they look for general safety of the building during their inspections, including electrical issues, plumbing, potable water, sewer lines, leaks, and other hazards, commenting that “We do not want the building to kill, hurt or make people sick by just living in the building with normal behavior.”<sup>744</sup> Although inspectors are concerned with a range of health problems related to housing, it seems that asthma is still not thought of as a health issue within the realm of building inspectors.

Overall, it seems that enforcement in Burlington is quite comprehensive, although as is common throughout New England, it seems it is a huge job to keep up with inspections of all units in addition to responding to individual non-routine inspections such as time of sale or complaint-triggered. Additionally, Burlington’s practice of inspecting all rental units in the state for compliance with the Minimum Housing Standards Ordinance covers both new and existing housing, which positively addresses previously-stated concerns about older buildings being less likely to comply with the Code. However, this would still only apply to rental housing.

### **Town of Manchester Municipal Code of Ordinances**

The Manchester Municipal Code of Ordinances lays out a quite detailed procedure for inspection and enforcement. According to Chapter Six of the Town of Manchester Municipal Code of Ordinances, a public authority or at least five town residents may file a petition with the public officer charging that “any dwelling is unfit for human habitation”.<sup>745</sup> Alternatively, the public officer may on his own initiative charge that a dwelling is unfit for human habitation. Either course results in a preliminary investigation, which may result in issuance and service of a

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<sup>743</sup> *Id.*

<sup>744</sup> *Id.*

<sup>745</sup> Town of Manchester Municipal Code of Ordinances, Chapter 6, Section 5.

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complaint to the owner of and parties in interest in such dwelling.<sup>746</sup> The complaint shall state the charges and contain a notice of a hearing to be held before the public officer or his designated agent “not less than ten days nor more than thirty days”<sup>747</sup> after service of the complaint. The owner and parties in interest shall also have the right to file an answer to the complaint and to give testimony at the designated time and place of the hearing.<sup>748</sup> If it is determined that the dwelling is unfit for human habitation, an order by the public officer shall require that the owner “repair, alter or improve the said dwelling to render it fit for human habitation or; at the option of the owner ... vacate and close the dwelling as a human habitation.”<sup>749</sup> Conditions which the public officer may consider may include, among other things, lack of adequate ventilation, light or sanitary facility; uncleanliness and filth.<sup>750</sup> If the owner fails to comply with the order, a penalty for violation of any provision shall be a fine not exceeding \$500.00; however, “each day of violation may be treated as a separate violation”.<sup>751</sup>

### **Rutland – Chapter 11 Housing Standards**

The city of Rutland does not have a single municipal housing ordinance, but rather has adopted several different building and safety codes that govern their inspections of rental housing. Title 9, Chapter 11 contains the Rutland Housing Standards. For a sanitation code analysis, the relevant sections are 1310 – Exterior property areas, 1311 – Exterior structure, 1312 – Interior structure, and 1313 – Light, ventilation and occupancy limitations.

The Rutland Code includes multiple provisions relevant to rodents and pest infestations. § 1310(e), “Rat harborage”, states that “[a]ll structures and exterior property shall be kept free

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<sup>746</sup> *Id.*

<sup>747</sup> *Id.*

<sup>748</sup> *Id.*

<sup>749</sup> Town of Manchester Municipal Code of Ordinances, Chapter 6, Section 7.

<sup>750</sup> Town of Manchester Municipal Code of Ordinances, Chapter 6, Section 8.

<sup>751</sup> Town of Manchester Municipal Code of Ordinances, Chapter 6, Section 13.

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from rat infestation...After extermination, proper precautions shall be taken to prevent reinfestation.”<sup>752</sup> § 1311(c), “Foundation walls”, states that “[a]ll foundation walls shall be maintained plumb and free from open cracks and breaks and shall be kept in such condition so as to prevent the entry of rats.”<sup>753</sup> § 1311(j)(2), “Insect screens” states that “from May 1 to October 1, every door, window and other outside opening used or required for ventilation purposes serving any building containing habitable rooms, shall be supplied with approved tightly fitting screens.”<sup>754</sup> § 1311(l), “Basement hatchways”, states that “[e]very basement hatchway shall be maintained to prevent the entrance of rats, rain and surface drainage water.”<sup>755</sup> Along those lines, § 1311(m), “Guards for basement windows”, states that “[e]very basement window which is openable shall be supplied with rat-proof shields, storm windows or other approved protection against the entry of rats.”<sup>756</sup>

The Rutland Code goes beyond rodent proofing and also includes provisions to guard against insects. § 1311(j)(2), “Insect screens” states that “from May 1 to October 1, every door, window and other outside opening used or required for ventilation purposes serving any § 1312(d), “Insect and rat harborage”, reads substantially the same as § 1310(3), with the elimination of the phrase “and exterior property” and the addition of insect infestation to rat infestation.

In the area of rodent-proofing, the Rutland code appears to be quite comprehensive, even using the same language in two different sections, one to cover the addition of insect-proofing. The frequency of rat-proofing language in the code indicates that the city recognizes the gravity of rat infestation. However, when comparing municipal codes as a whole to the ARC and EPA

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<sup>752</sup> Title 9, Chapter 11, § 1310(e).

<sup>753</sup> Title 9, Chapter 11, § 1311(c).

<sup>754</sup> Title 9, Chapter 11, § 1311(j)(2).

<sup>755</sup> Title 9, Chapter 11, § 1311(l).

<sup>756</sup> Title 9, Chapter 11, § 1311(m).

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standards, the language here again seems broad. As in Burlington, this code also does not specify rat-proofing through sealing and caulking, etc., but does specify supplying basement windows with rat-proof shields “or other approved protection”. The language about taking proper precautions to prevent reinfestation, however, is again vague. Proper precautions could mean by sealing and caulking, etc., but these are not spelled out in the code; consequently it is unclear whether these methods are used and whether inspections could require the use of such methods.

There are also some limited ventilation requirements in the Rutland Code. Under § 1313(b), “Ventilation”, section 2, “Bathrooms and toilet rooms” requires at least one openable window

“except that a window shall not be required in spaces equipped with a mechanical ventilation system that complies with the following: Air exhausted by a mechanical ventilation system from a bathroom within a dwelling unit shall be exhausted to the exterior and shall not be recirculated to any space, including the space from which such air is withdrawn.”<sup>757</sup>

§ 1313(4), “Clothes dryer exhaust”, requires clothes dryer venting systems “be independent of all other systems and shall be vented in accordance with the manufacturer’s recommendations.”<sup>758</sup>

While this ventilation regulation appears to be very specific, laying out a sub-regulation of sorts for acceptable mechanical ventilation systems. However, the EPA guideline is still the most specific, requiring ENERGY STAR fans in bathrooms. As in Burlington, the Rutland code allows windows in place of mechanical ventilation for bathrooms, again possibly an allowance for the age of housing in Vermont. The Rutland code fails completely in the area of cook top ventilation, making no mention of it anywhere in the code.

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<sup>757</sup> Title 9, Chapter 11, § 1313(b)(2).

<sup>758</sup> Title 9, Chapter 11, § 1313(4).

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Overall, these sections seem to be almost in line with most of the ARC and EPA guidelines, although they also share some of the problems common in other municipalities, namely a lack of specificity.

### Case Law

The relevant case law in Vermont supports the suspicion that much of the regulation and enforcement of the health codes will fall under landlord/tenant law. Three cases on point are *Hilder v. St. Peter*,<sup>759</sup> *Bisson v. Ward*,<sup>760</sup> and *L'Esperance v. Benware*.<sup>761</sup> Violation of the doctrine of implied warranty of habitability seems to form the legal basis for most of the lawsuits, and is an element of each of three cited cases. In *Hilder*, the Supreme Court of Vermont held that substantial violation of an applicable housing code constitutes evidence that the warranty of habitability has been breached, and they specifically state that a court may look to local or municipal housing codes and the minimum standards laid out in 24 V.S.A. § 5003(c)(1) through 5003(c)(5).<sup>762</sup> In the *Hilder* case, the plaintiff tenant's apartment created serious health risks to her and her family. These conditions included a leaky upstairs apartment which caused large sections of plaster to fall or remain dangling from her ceiling and a broken sewage pipe in the basement which resulted in raw sewage collecting in the basement.<sup>763</sup> The lower court found that there had been a breach of warranty of habitability, which the landlord did not appeal. The tenant was awarded damages for the entire rent amount, and the case was remanded for determination of further compensatory damages.

The cases that followed *Hilder* similarly found in favor of tenants whose dwellings were uninhabitable. *Bisson* found a landlord who had breached the warranty of habitability through

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<sup>759</sup> *Hilder v. St. Peter*, 478 A.2d 202 (Vt. 1984).

<sup>760</sup> *Bisson v. Ward*, 628 A.2d 1256 (Vt. 1993).

<sup>761</sup> *L'Esperance v. Benware*, 830 A.2d 675 (Vt. 2003).

<sup>762</sup> *Hilder*, 478 A.2d at 208.

<sup>763</sup> *Id.* at 206.

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violations of state building and health codes.<sup>764</sup> Although the plaintiffs in *L'Esperance* did not prevail on their claims of violation of the rental housing health code and breach of warranty of habitability, they were awarded the maximum amount of damages possible under the Consumer Fraud Act since the landlord had been ordered to rectify the code violations prior to renting the dwelling but had not done so.<sup>765</sup> All cases were on appeal with regard to the award of damages to the plaintiffs. Tenants have successfully brought claims for housing issues related to asthma triggers; litigation may be an effective avenue to address asthma triggers in rental housing.

### **Conclusion**

The various municipal codes which govern rental housing in Vermont with regard to health issues seem to address reduction and prevention of asthma triggers on a very basic level. This gives the state a strong base from which to improve and perhaps adopt some of the more specific standards suggested by the ARC and EPA into their own state statutes or municipal ordinances. The inspection process, which allows for inspections to be triggered by private complaints, as well as the right of tenants to sue landlords for breach of implied warranty of habitability, are positive aspects of the state of the law in Vermont. With the recent introduction of the Asthma Program and Asthma Prevention Plan 2003, it is clear that Vermont is more than willing to address the problem of asthma. In addition, as evidenced by the proposed bill to register residential rental property, Vermont is also working to address rental housing. With increased awareness and raising the problem of asthma to a critical level of importance in the public's eye, it will not be long before we may see a plateau or even a possible turnaround in numbers of Vermonters with asthma.

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<sup>764</sup> 628 A.2d 1256.

<sup>765</sup> 830 A.2d 675

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## **VIII. Analysis of Building and Sanitation Codes**

### **Codes Compared to ARC/EPA Guidelines**

The various New England states all have different building and sanitary codes. Some state codes are more specific with respect to certain asthma triggers and more lenient with respect to others; these strengths and weaknesses vary among states. However, there are similarities in the way the codes as a whole compare to the ARC and EPA guidelines. When analyzed in comparison to the ARC and EPA guidelines, none of the state codes contain the exact language of the recommendations, yet most of them contain provisions that correspond to all of the ARC and EPA suggested guidelines. In fact, in many states there are aspects of the codes that are written with even greater specificity than the corresponding ARC and EPA guidelines. Still, one trend remains across all of the states: it appears clear that asthma, or respiratory problems in general, have not had a tremendous impact on the construction of these codes. While the codes do address certain triggers of asthma, there is not a consistent emphasis on hazards that might lead to breathing problems, especially when the codes are compared with the ARC and EPA guidelines.

Both the building and sanitary codes are written with clear goals and priorities. In the building codes, much of the emphasis is on structural safety and fire protection. Sanitation codes are generally very concerned about lead paint and insect and rodent infestation. These health risks are explicitly addressed in various places in the codes.

Rodent and pest infestation is a clear concern addressed in nearly all of the building and sanitary codes across all of the New England states. Most of the codes have significant language

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and specifications dealing with their control, prevention, and extermination.<sup>766</sup> As an example of this heavy emphasis placed on pest control, Rhode Island has passed a statewide Rodent Control Act. While this is positive in that pests are a serious asthma trigger, other triggers, such as mold, mildew, and dust, can be just as detrimental to one's health. Yet the codes are consistently less specific with respect to those health issues than they are with respect to pests and rodents. This is presumably because it is easier to recognize a pest or rodent problem than it is to recognize a mold, mildew, or dust problem.

The ARC and EPA guidelines are noticeably more stringent with respect to ventilation than are many of the state codes which leave a lot of discretion to the individual inspectors. While most state and municipal building and sanitation codes do require some type of ventilation, they tend not to enumerate the specifications required to provide adequate ventilation. Thus, the inspector is left to decide what constitutes adequate ventilation. Additionally, whereas the ARC and EPA guidelines require vented fans to provide exhaust for cook tops, no state so requires. Some states, instead of requiring that kitchens have such ventilation, merely require that if the ventilation exists, it must exhaust directly to the outdoors.

Another area in which the building and sanitation codes tend to be less restrictive is with respect to moisture in the bathrooms. ARC recommends that no carpet be installed in bathrooms and the EPA recommends that there be no wall-to-wall carpeting in bathrooms. Most states, however, require that the floors merely be nonabsorbent and waterproof, while some go further and specify which types of flooring are acceptable. But again, much discretion is left to the inspector to determine if the standards are met.

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<sup>766</sup> In their *Building Guidance for Healthy Homes*, ARC points out that toxic chemicals, such as those contained in some pesticides, can exacerbate asthma. Thus the sanitary codes could be improved by provisions which not only require extermination of pests, but specify how to do so safely. See: Asthma Regional Council, *Building Guidance for Healthy Homes*, (April 4, 2002).

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While it is evident that the state and local building and sanitation codes generally do not address asthma triggers with as much depth and specificity as the ARC and EPA guidelines suggest, there do seem to be some positive trends in building and sanitary codes. Several of the New England states are in the process of reexamining their respective codes and considering either making useful changes or adopting new codes entirely. For example, since construction has become significantly more airtight in the last few decades, inspectors and others have begun to recognize the health risk which is created in homes that cannot “breathe.” This realization has in turn led to greater emphasis in the codes on ventilation systems as a means of ensuring that homes are adequately ventilated. Changes such as these reflect how increased awareness and education about health risks can lead to revisions in the building and sanitary codes.

### **Code Application**

The state structure and manner in which codes are adopted also have a great impact on their effectiveness. For example, the failure of a state to adopt a statewide building or sanitation code allows municipalities to enact their own, causing wide disparities within the state. While some municipalities may adopt codes which are more detailed than could be adopted on the state level, others will adopt lenient codes or not adopt them at all. This is the situation in Vermont, for example. While some municipalities, like Burlington and Rutland, have adopted BOCA codes, the town of Manchester does not have a building code at all and thus does not inspect new homes for code compliance. This poses a potentially serious health threat to residents who have no way, apart from hiring a private inspector, of ensuring that the structures they live in are safe.

Another issue is when there is a statewide building code, but it does not apply to all types of buildings. In New Hampshire, for example, the state adopted the relatively comprehensive IBC; however, detached one- and two-family dwellings and multiple single-family dwellings are

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not bound by the IBC. There is a relatively comprehensive Residential Code which governs one-and-two family dwellings; nonetheless, it is unclear if this code is as effective as the IBC. While it is understandable that states might be concerned for the autonomy of homeowners and municipalities, the failure to adopt comprehensive statewide guidelines for all types of dwellings, does potentially expose state residents to serious health risks.

### **Analysis of Enforcement in New England**

The effectiveness of the provisions discussed above depends on the actual enforcement of the codes. Examination of enforcement within New England shows that many of the states face similar problems in upholding the codes, and many of the inspectors hired to enforce the Building and Sanitation Codes do not feel that asthma and the things that trigger asthma are their responsibility. Enquiry into what responsibilities inspectors actually believe is a part of their job and the financial situation faced by state and municipal agencies reveals why asthma triggers are often overlooked by inspectors.

### **The Inspector's Responsibilities**

One problem that occurs in most municipalities throughout New England is that Building Inspectors see their primary concentration being new construction, and an inspection is only triggered when a permit to build is requested. This means, of course, that only new buildings will comply with the Building Code, and after a premises is issued a Certificate of Occupancy no further inspections will be made. Some states, such as Rhode Island face further problems because owners will illegally construct apartments without ever obtaining a building permit. This may mean that these buildings will never be inspected, and the conditions in such apartments are often substandard. The fact that building inspectors primarily focus on new buildings is problematic because existing buildings are likely to experience moisture, mold, and pest problems. If building inspectors receive complaints about an existing building, these

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complaints are often forwarded to the Housing department and issues such as moisture, mold, and pests are all viewed as something that is a sanitation problem not a building problem.

Sanitation inspectors do a great deal to fill in the gaps that exist because building inspectors do not enforce the code in existing homes. However, a sanitation inspection is not mandatory in most New England states; rather, an inspection is only triggered by a tenant or owner complaint. Since inspections are only complaint generated, a tenant or owner will often not call to complain about inadequate ventilation or a leak in a pipe simply because he/she is not even aware of the great danger that these conditions pose on a person who already has an asthmatic condition. Furthermore, even if a tenant is aware of dangerous conditions, they may be unwilling to complain. Certain groups, for example illegal immigrants, may be especially subject to these substandard conditions because the rent is cheaper and these tenants will not call and complain out of fears that they will be penalized for their illegal status.

A further challenge in enforcement occurs because many conditions that cause asthma triggers are the result of a combination of flaws on the premises. In order to adequately address the problems would take a combined effort of both the sanitation and building inspectors. For example, most sanitation problems such as mold can be traced back to building problems like a leaky roof and while a sanitation inspector can deal with the obvious problem, it is seen as the building inspector's responsibility to deal with the underlying problem. This means, in most cases that the underlying problem is never really dealt with because as afore said building inspectors focus on new buildings and pass on complaints to the sanitation inspectors.

Unfortunately, given that each department sees asthma triggers as the responsibility of the other department, it often results that these issues fall through the cracks of the enforcement process.

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Another problem in enforcement is simply that most inspectors, both sanitary and building, do not see respiratory health to be one of their essential duties, and often those things that trigger asthma are viewed as quality of life concerns and take a back seat to life safety concerns. Building inspectors focus on structural integrity and fire safety. While inspectors enforce provisions that may impact asthma triggers, such as weather-tightness and adequate ventilation, this enforcement is related to their impact on structural integrity. This means that enforcement of these provisions may not be as stringent as it would be if inspectors were considering respiratory health issues. In some states, for example, moisture in a home would not trigger a violation unless the inspector felt that the moisture was so excessive it would eventually rot out wood causing a structural concern. Unfortunately, in the wake of the fire tragedy at the Station Nightclub, and with inspectors concentrating more and more of their time on fire safety, there is less time to worry about conditions that lead to asthma triggers. While building inspectors are focusing on fire safety and structural integrity, sanitation inspectors are chiefly interested in heating concerns, pests, and lead paint. A large reason for this focus is that most of the complaints received by sanitary inspectors are about heat, pests, and lead paint.

One essential power that both building and sanitary inspectors possess is the ability to issue violations. However, there is a wide spectrum varying from lenient to strict on how and when inspectors choose to issue violations depending on the municipality in question. In general, however, inspectors are given a great deal of discretion in determining whether a warning should be issued, how formal a violation to issue, or if the building should be condemned. One of the major problems in issuing violations is that follow-up is often infrequent; thus, issuing a violation does not necessarily mean that the problem will be fixed. Furthermore, many owners of apartment complexes may be hard to track down, and often these people will not respond to

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warnings and complaints until they are summoned into court. Unfortunately, this is a time-consuming and lengthy process, and because an inspector may issue several violations before he resorts to a Court's summons, it can take months for even minor problems to get solved. This wide range of discretion may result in some groups being subject to different enforcement standards, which may then impact their housing conditions.

Owners and tenants of homes, as well as building and sanitation inspectors themselves, generally know very little about the dangers of excessive moisture, mold, and inadequate ventilation. No states require asthma or respiratory training for their inspectors, and very few municipalities have yet offered such training for their inspectors, let alone made it mandatory. This fact alone shows that municipalities simply have not yet recognized asthma triggers to be a concern in the same way they view the importance of fire safety and lead paint. In Massachusetts, for example, sanitary inspectors all have lead paint training and rigorously check for lead paint violations, but there is no equivalent training for the detection of asthma triggers.

### **Lack of Manpower and Budget Cuts**

Many of the problems that building and sanitation inspectors have in regards to upholding provisions of the code can be traced back to the fact that states are cutting back on the funding given to these departments, and there is simply a lack of manpower and money to do an adequate job across the board. Almost all of the municipalities in this study complained that they were seriously understaffed due to budget cuts, and in many places, there is simply an insufficient number of inspectors in the departments. The number of inspectors in a municipality is generally connected to the economic base of the city. Unfortunately, this results in cities with the poorest populations having the least amount of money, the fewest inspectors, and often the largest number of buildings that need to be inspected. Hartford, Connecticut is one clear

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example. In this atmosphere, it is inevitable that overwhelmed inspectors will only have time to deal with life-safety issues like structural integrity, fire safety, heating, and lead paint and asthma triggers often get left out of a hurried inspection.

Lack of adequate funds may also impact enforcement capabilities if municipalities are unable to afford proper, up-to-date equipment to conduct inspections. For example, problems like moisture and mold require special equipment to determine when there is excessive moisture or mold within a home. Lacking this equipment, it may be that mold will only be dealt with when it becomes a glaringly obvious problem, and usually if this is the case, the mold has become so pervasive that the building must be condemned.

Lack of funding and manpower also explains why inspections are complaint generated only. Municipalities simply lack the staff to go in and proactively check structures on a regular basis. Indeed, some municipalities such as Norwich, Connecticut used to require that all existing buildings have a Certificate of Occupancy issued every three years, which meant that an inspector would be sent in to all buildings every three years to do an inspection before another Certificate was issued. However, due to budget cuts, Norwich could no longer afford these proactive inspections, and now only do inspections upon receiving a complaint.

Compounding this lack of resources is the fact that inspectors have many job responsibilities. In many large municipalities, such as Boston, the inspectors are also responsible for ensuring that commercial building and public places of assembly are not in violation of the codes. In some smaller towns, such as Berlin, New Hampshire, all building inspections are completed by one part-time employee. In both situations, inspectors face quite limited time in which to complete their duties, leaving even less time to ensure that private housing is protected against asthma triggers.

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### **IX. CONCLUSION**

Asthma is a severe and costly disease exacerbated by substandard housing conditions. However, stakeholders in New England, from homeowners to tenants, from legislators to inspectors do not seem to be aware of the severity of asthma or its connection to housing. While building and sanitation codes do contain provisions pertaining to asthma triggers, these codes should be strengthened with issues of respiratory health in mind. Regardless of their content, codes may or may not be enforced. Without awareness of the seriousness of asthma, inspectors are not using their discretion to enforce these violations. Moreover, while tenants can pursue legal redress for substandard housing, the judicial process is expensive and judges may not be sympathetic to these issues. Thus, while there are remedies available to asthma sufferers, without increased awareness, they will be of limited effectiveness.

Asthma must be understood and portrayed as the devastating disease that it is in order to bring about meaningful change, which could occur as a result of it being seen as a serious health concern. Relatively simple changes in the building and sanitary codes could have significant positive ramifications for the people living in conditions that are exacerbating their illness, and could save the government significant costs in healthcare, unnecessary workplace absences, and emergency room visits.

Legislatures must see addressing asthma as a long-term cost-effective way to improve the public health before they are willing to expend more money on immediate strategies to combat it. The exorbitant costs now associated with asthma rates alone should be motivation for the legislature to act. In Massachusetts, the direct and indirect costs associated with pediatric asthma

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are nearly \$77 million annually.<sup>767</sup> In New Hampshire, costs for hospital visits related to asthma totaled over \$4.6 million last year.<sup>768</sup>

In addition to these extensive medical expenses, states also incur less noticeable monetary burdens due to asthma. Dr. Joseph Carrillo testified before the Massachusetts Legislature that the single mother of an eight-year-old asthmatic he diagnosed was working two jobs, and without health insurance.<sup>769</sup> Because of her son's asthma, she missed such a significant amount of time from work that she was fired from one job and barely kept the other, all while falling deep into medical debt. Her son missed 40 days of school within two years, but after Dr. Carrillo's help in developing an asthma management plan, he missed only one day of school the following year, and his mother successfully maintained her jobs.<sup>770</sup> Thus, management plans are not only helpful to the actual patient, but significantly reduce the amount of lost time that a worker incurs in caring for an asthmatic child.

Treating asthma proactively by legislating changes into building codes that would reduce asthma triggers is much more cost effective than simply waiting until a problem occurs. For example, it is extremely expensive to gut a building that has become infested with mold: a serious asthma trigger. Moreover, rebuilding housing displaces the occupants or forces them to incur the costs of additional housing until their homes get rebuilt. A much more practical approach would be taking steps to ensure that excess moisture never builds up, rather than waiting until something so egregious is found that the entire building must be destroyed and rebuilt.

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<sup>767</sup> Attacking Asthma, Senate, No. 2505

<sup>768</sup> see FN 368 in NH; NH Dept. of Health and Human Servs. Off. of Community and Pub. Health, *Asthma in New Hampshire 1990-2001*, [www.dhhs.state.nh.us/DHHS/ASTHMACONTROL/LIBRARY/Data+Statistical+Report.html](http://www.dhhs.state.nh.us/DHHS/ASTHMACONTROL/LIBRARY/Data+Statistical+Report.html).

<sup>769</sup> Id.

<sup>770</sup> Id.

## **DRAFT, NOT TO BE CIRCULATED**

Code inspectors also play an integral role in preventing substandard housing conditions that may contribute to severe asthma. Inspectors must receive training on the impact their work can have for people suffering from respiratory illnesses. With the increased awareness that would result from training, inspectors might use their seemingly large discretion to note violations related to asthma triggers. While structural integrity and fire safety will continue to be inspectional priorities, inspections may highlight rather than ignore asthma triggers, having huge ramifications for asthma sufferers. The impact education can have on inspectors is noted by the one inspector in our study who had received asthma training. She commented that the asthma training she received has increased her awareness of triggers when she is out in the field inspecting homes.

Tenants and homeowners have a great deal of personal responsibility in making sure their homes remain free from asthma triggers. Because inspections are only triggered by a complaint, a tenant must first realize that things like moisture and inadequate ventilation contribute to asthma and respiratory problems. Because private homes are not subject to inspections, homeowners must also be aware of the critical relationship between housing and asthma triggers. Tenants and homeowners will only make use of the state inspection process if they are aware of the severity of these problems.

Homeowners, tenants and landlords may be unwilling to spend money to reduce asthma triggers in housing, particularly if they are unaware of the severity of the health risk. For example, cheap carpeting in many lower-income housing units emits a significant amount of formaldehyde gas, which can be detrimental to the air quality; however, installing carpeting that emits significantly less gas costs three times as much. Many people may be unwilling to make these changes unless they perceive a direct effect on their health since these changes are so costly.

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Furthermore, homeowners and landlords simply may not have the resources to make these changes.

Even if tenants are aware of the health risks in their homes and seek remedy in the courts, they will not be provided with judicial redress unless judges are also aware of the severity of asthma and its connection to housing. In Connecticut, for example, in order for a tenant to turn to the courts, he or she must show that the condition “materially affects” the health of the tenant. Thus far, judges in Connecticut have interpreted such a material health threat to include severe cockroach infestations but have been unwilling to help tenants in the case of drainage problems and standing water, two other known asthma triggers. However, if judges perceive the threat of conditions such as mold, excessive moisture or rodents as materially important to the health of citizens, they may order landlords to fix these conditions.

Legislators must also be made aware of the critical nature of asthma. The exponential growth of asthma throughout New England is something that has profound effects on all classes, on all ethnic groups, and thus on all voters. For example, having a healthy working public would benefit the economy as a whole in each of the states. Taking a strong stance and showing a willingness to deal with this public health crisis will certainly place any legislator in a favorable light.

### **Potential Remedies**

There are many things that states and municipalities could do in regards to strengthening their inspection process and better protect people from asthma triggers within their home. States could institute requirements that all buildings must be inspected once every three to five years in order to receive a Certificate of Occupancy. Also, timing of building inspections could be mandated to ensure that inspectors are present at specified times during construction.

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Additionally, there could be requirements for a minimum number of inspectors in proportion to a municipality's population. States could also ask other public departments like the Department of Social Services, to become educated about asthma and issue complaints when they are in homes whose conditions exacerbate asthma. Perhaps municipal governments could provide homeowners with financial incentives such as loan assistance to cover the cost of renovations to remedy the problem, as has been done in cases of lead paint in homes.

When developing remedies to address this issue, the disproportionate impact of asthma on lower-income residents of New England must be considered. Lower-income people are less likely to be able to afford better quality products and care, and may be incapable of accessing the resources they need to effectuate change. They are also more likely to be tenants and are therefore at the will of their landlords to ensure their safety and health. Procedurally, the obstacles to accessing the legal system are great and the cost of lawyers prohibitive. Thus, while increased awareness of asthma and the suggested remedies to address the asthma health crisis apply to all New England residents, particular attention must be paid to empower lower-income residents who suffer disproportionately from this disease and are least equipped to access remedies.